Group H

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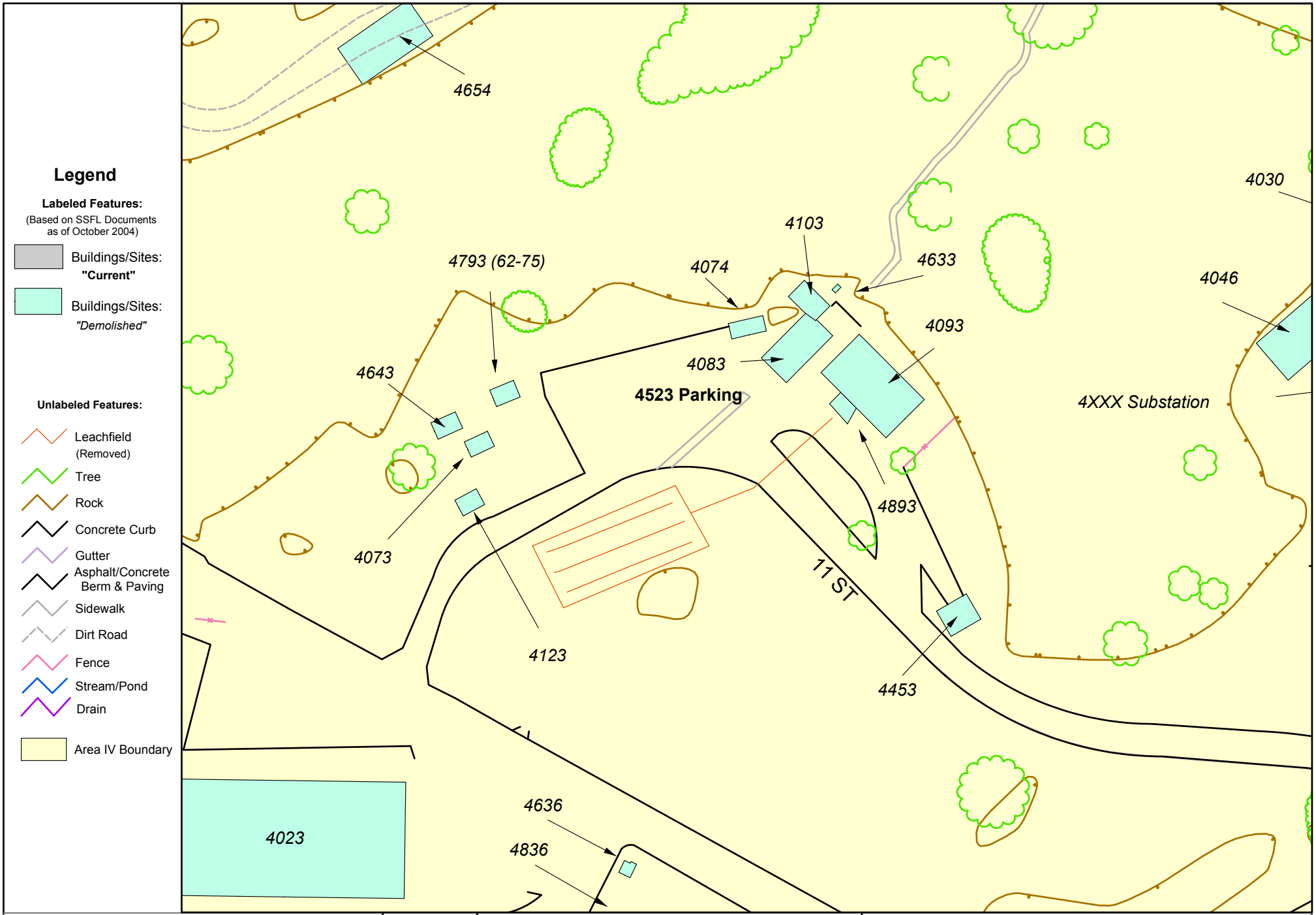
Legend
Labeled Features:
(Based on SSFL Documents as of October 2004)
Buildings/Sites: "Current"
Buildings/Sites: "Demolished"
Unlabeled Features:
Leachfield (Removed)
Tree
Rock
Concrete Curb
Gutter
Asphalt/Concrete Berm & Paving
Sidewalk
Dirt Road
Fence
Stream/Pond
Drain
Area IV Boundary
4654
4030
4103
4793 (62-75)
4074
4633
4046
4093
4643
4083
4523 Parking
4XXX Substation
4893
4073
11 ST
4123
4453
4023
4636
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DRAWN BY:
Sapere CONSULTING INC
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May 2005
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1 inch equals 75 feet
0 30 60 120 180
Feet
Site Summary Group H
AREA IV
Santa Susana Field Laboratory, CA

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Site Summary – Building 4073

Site Identification:

Building 4073
Reactor Kinetics Test Building
Kinetics Experiment Water Boiler (KEWB)

Operational Use/History:

- Constructed in the early 1950s.
- The KEWB reactor was a small graphite-encased research reactor that used a water solution of uranyl sulfate as fuel.[1]
- The "A" Core (spherical) went critical on July 13, 1956, and was removed in August of 1959.
- The "B" Core (cylindrical) went critical March 1960.
- Operations halted in 1966.
- In 1968 the fuel was drained and decontamination began.
- Demolished in 1975. Activities included the following:
  - Demolition of all non-concrete portions of 4073.
  - Removal of the tank system.
  - Backfilling the remaining floor and walls with asphalt rubble and covering it with six feet of earth.
  - Grading and re-vegetating of the site.
- The site was released for unrestricted use on March 3, 1976, by the Energy Research and Development Administration (ERDA).[2]

Site Description:

- The KEWB reactor building consisted of an underground concrete structure and an above-ground wood and metal changing/workroom. The underground portion of the reactor building measured 15 x 26 feet and was 10 feet tall. The facility included a gaseous and liquid holdup tank system consisting of one 300-gallon tank and two 1,000-gallon tanks, located underground near the structure.[3] The ventilation system for Building 4073 was housed in Building 4643, which was connected to the reactor building.

Relevant Site Information:

- The reactor had a capacity of 50 kWt, but did not normally operate at full power; the majority of reactor operations were conducted at a power level of 1 kWt or less.[1]
- Reactor fuel for the KEWB reactor was U-235 dissolved as uranyl sulfate in solution. The radionuclides of concern are Co-60, Cs-137, Eu-152, Eu-154, Sr-90, U-238 and U-235.[1]

- Two incidents associated occurred in Building 4073 that resulted in employee exposure, and could have resulted in a potential release to the environment:
    - On February 10, 1958, KEWB reactor operators received weekly exposures greater than 300 mrem while performing core maintenance activities. Upon further investigation, it was concluded that the elevated levels were a result of dosimeter error, and that actual exposures were within permissible levels (A0522).
    - From April 1 to June 30, 1961, a research engineer conducting KEWB reactor core experiments received a quarterly exposure to gamma and neutron radiation at levels greater than 3 rem. These core experiments were required for successful termination of the KEWB Program and resulted in high radiation levels in the reactor room, and consequently caused the employee's exposure. The employee was aware of his high cumulative exposure in early May; however, due to the importance of the tests and lack of other qualified operators, he continued to conduct "unreflected" core experiments without prior approval to exceed the 3 rem quarterly limit (A0504).

Radiological Surveys:

- In July 1975, Rocketdyne performed a surface scan of the KEWB site to confirm that no radiological contamination remained.[4]
    - The survey found no levels of beta-gamma surface contamination above the measured background (0.15 – 0.25 mrad/hr).
    - Survey results were below acceptable limits.
- In 1976, Rocketdyne performed a final radiological survey during decontamination and demolition (D&D) of the facility and published results in the final D&D report.[3]
    - Survey results found that all remaining surfaces were decontaminated to levels as low as reasonably achievable; in all cases below the levels for future unrestricted use (removable contamination of 20 dpm/100cm$^2\alpha$ or 100 dpm/100cm$^2\beta$).
    - Survey results were below the acceptable limits.
- In May 1983, Argonne National Laboratories performed a post-remediation radiological survey.[5]
    - The survey performed a surface scan to determine ambient gamma exposure rate and low-level radiation level. Also, soil samples were taken and analyzed for gamma radiation and uranium.
    - The survey found no measurements above background. Background is relatively high (40 μR/hr and 8,000 cts/min) due to shine from nearby Building 4021 and Building 4022.
    - The survey concluded that the site could be released for unrestricted use.
- In August 1988, Rocketdyne performed a surface scan measuring ambient gamma exposure rate to ensure no contamination existed as a result of radioactive materials movement.[6]

- Mean exposure rate: 17.4 ± 0.96 μR/hr (–0.2 ± 0.96 μR/hr when corrected for background).
- Background: 17.0 μR/hr.
- Acceptable limit: 5.0 μR/hr above background.
- Survey results were below the acceptable limits.

Status:

- Building 4073 was demolished in 1975.[5]
- The Energy Research and Development Administration released the facility and surrounding area for unrestricted use in 1976.[2]

References:

1- Rocketdyne Report, N001ER000017, "Nuclear Operations at Rockwell's Santa Susana Field Laboratory – A Factual Perspective," September 1991.
2- Letter from Stanley Stamp (ERDA) to W. F. Heine, "Decontamination and Disposition of ERDA Facilities," March 3, 1976.
3- Rockwell International Report, AI-ERDA-13159, "KEWB Facilities Decontamination and Disposition Final Report," February 25, 1976.
4- Letter from R.K. Owen (Rockwell International) to R.J. Tuttle, "Radiation Survey – T073 (KEWB) Site," July 17, 1975.
5- Argonne National Laboratory Report, no document number, "Surplus Facilities Management Program, Interim Post Remedial Action Survey Report for Kinetic Experiment Water Boiler (KEWB) Facility, Santa Susana Field Laboratory, Rockwell International, Canoga Park, California," May 1983.
6- ETEC Document, GEN-ZR-0009, "Radiological Survey of the T513 Parking Lot; Old R/A Laundry Area; Plot 333; and Areas Between the SRE to RMDF, and KEWB to RMDF," August 26, 1988.
7- Historical Site Photographs from Boeing Database.
8- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.

Photograph – Building 4073

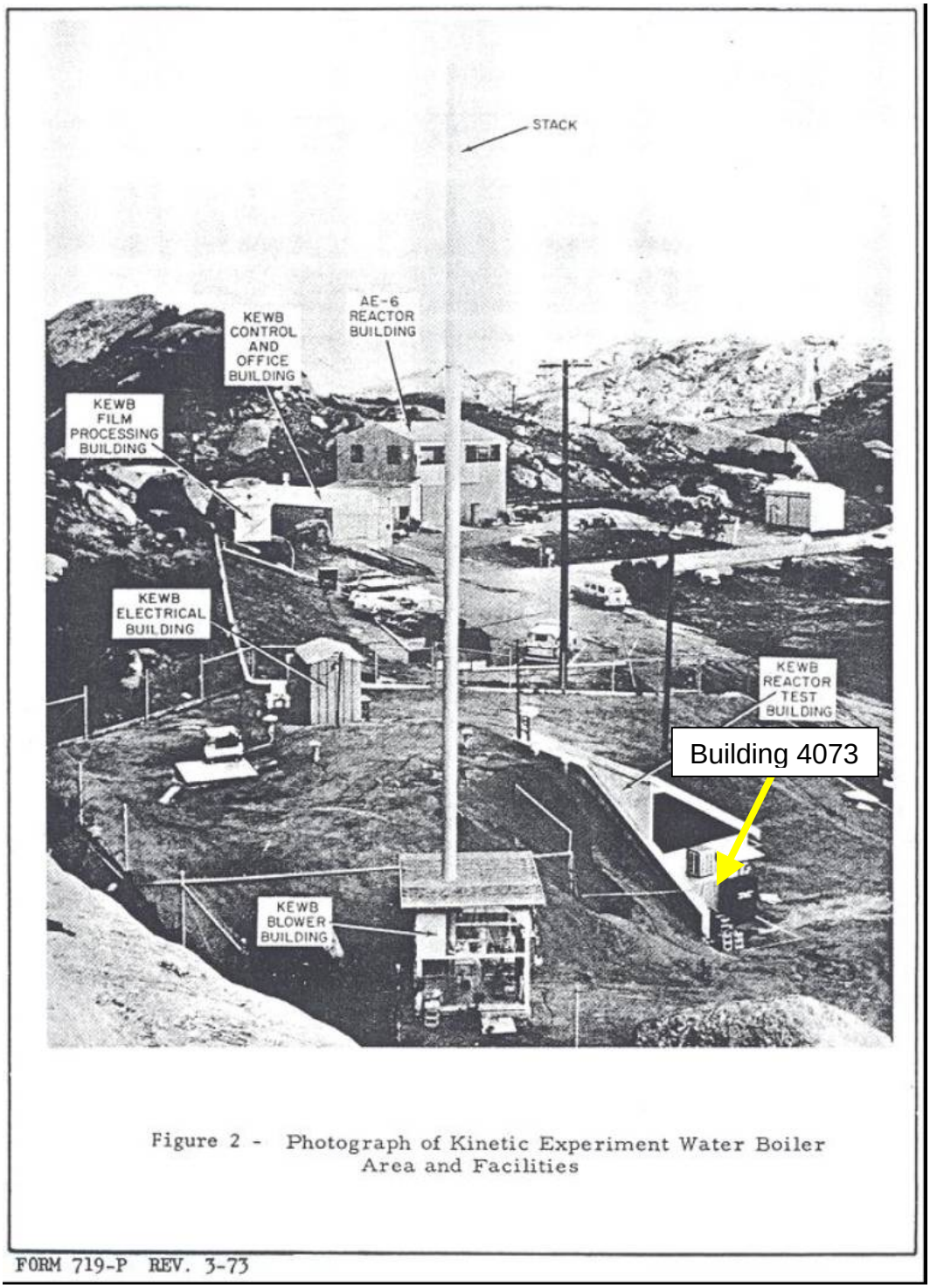

Figure 2 - Photograph of Kinetic Experiment Water Boiler Area and Facilities

FORM 719-P REV. 3-73

Site Summary – Building 4074

Site Identification:

Building 4074
Storage Building
KEWB Film Processing Building

Operational Use/History:

- Constructed in 1958.
- Building 4074 was constructed to serve as a storage and film processing building where personnel processed photographic oscillograph paper for KEWB.
- Ownership transferred from AEC to Rockwell in 1972.[1]
- The Nuclear Regulatory Commission (NRC) licensed the facility on January 5, 1972 (R-118 Docket No. 50-375). [1]
- Demolished in 1980. The foundation and any remaining concrete were left in place.
- Released for unrestricted use and NRC license terminated March 19, 1987.[2]

Site Description:

- Building 4074 was a storage building consisting of a steel frame covered in sheet metal located near Parking Lot 4523.[3]

Relevant Site Information:

- There are no Use Authorizations and no Incident Reports associated with Building 4074.[4]

Radiological Surveys:

- In 1985, Rocketdyne conducted a final radiological survey, releasing the final report in March 1986. (The survey included Buildings 4073, 4074, 4083, 4084, 4093, 4453 and 4453). [1]
    - Soil samples showed no evidence of radioactivity due to facility operations.
    - Maximum average alpha: 17.2 dpm/100cm^2 (limit is 5,000 dpm/100cm^2).
    - Maximum average beta: 1,987 dpm/100cm^2 (limit is 5,000 dpm/100cm^2).
    - The maximum ambient exposure rate was originally found to be 23.1 μR/hr (limit is 18.9 μR/hr). The ambient exposure rates over the limit were attributed to the nearby Radioactive Materials Disposal Facility (RMDF) and do not represent residual contamination.
    - The survey found that measured radiation levels were below acceptable limits, making the site acceptable for unrestricted use.

- NRC conducted a decommissioning inspection in 1987. Results of the inspection determined the maximum exposure rate to be below the limit of 5 μR/hr above background, meeting the criteria for unrestricted use.[5]

Status:

- NRC released the site for unrestricted use in 1987.[2]
- Building 4074 was demolished in 1995.

References:

1- Rocketdyne Report N001SSR140087, "Radiation Survey for Release for Unrestricted Use – L-85 Reactor Facility," March 6, 1986.
2- Letter from F.J. Miraglia (NRC) to M.E. Remley, "Order Terminating Facility License R-118, for the Rockwell International L-85 Nuclear Examination Reactor," April 8, 1987.
3- Atomics International Document, AI-70-73, "Safety Analysis Report for L-85 Nuclear Examination Reactor," November 25, 1970.
4- Review of Radiation Safety Records Management System, 2003.
5- Letter from Frank Wenslawski (NRC Region V) to Herbert Berkow, "Closeout Inspection for Rockwell International L-85 Reactor, Docket No. 50-375," March 19, 1987.
6- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
7- Historical Site Photographs from Boeing Database.

Photograph – Building 4074

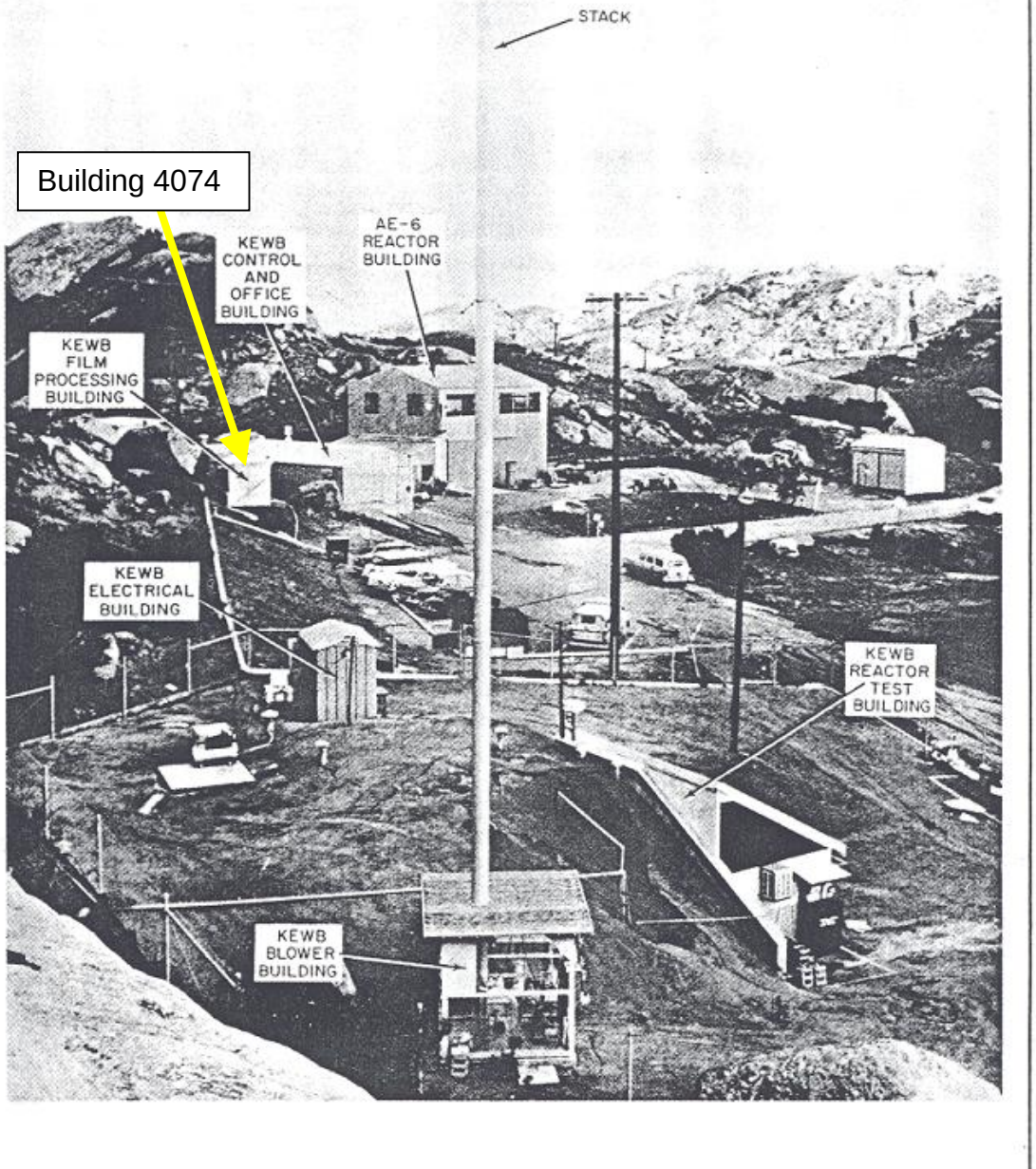

Figure 2 - Photograph of Kinetic Experiment Water Boiler Area and Facilities

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Site Summary – Building 4083

Site Identification:

Building 4083
Reactor Kinetics Control Building
Office and Laboratory Building
Includes Building 4103, Reactor Kinetics Lab and Storage

Operational Use/History:

- Constructed in 1958.
- Building 4083 was constructed to serve as the control building for the KEWB reactor.
- Ownership transferred from the Atomic Energy Commission (AEC) to Rockwell in 1972.[1]
- NRC Licensed the facility January 5, 1972 (R-118 Docket No. 50-375). [1]
- In the early 1970s, Building 4083 was modified to include the Reactor Kinetics Lab and Storage (Building 4103), changing the footprint of Building 4083.
- Demolished in 1980. The foundation and any remaining concrete were left in place.
- Building 4083 was released for unrestricted use by NRC and the NRC license was terminated March 19, 1987.[2]

Site Description:

- Building 4083 consisted of a wood frame covered in sheet metal.[3]

Relevant Site Information:

- There are no Use Authorizations and no Incident Reports that may have resulted in a release to the environment associated with Building 4083 or Building 4103.[4]

Radiological Surveys:

- In 1985, Rocketdyne conducted a final radiological survey, releasing the final report in March 1986. (The survey included buildings 4073, 4074, 4083, 4084, 4093, 4453 and 4453). [1]
    - Soil samples showed no evidence of radioactivity due to facility operations.
    - Maximum average alpha: 17.2 dpm/100cm^2 (limit is 5,000 dpm/100cm^2).
    - Maximum average beta: 1,987 dpm/100cm^2 (limit is 5,000 dpm/100cm^2).

  - The maximum ambient exposure rate was originally found to be 23.1 μR/hr (limit is 18.9 μR/hr). The ambient exposure rates over limit were attributed to the nearby RMDF and do not represent residual contamination.
  - The survey found that measured radiation levels are below acceptable limits, making the site acceptable for unrestricted use.
- NRC conducted a decommissioning inspection in 1987. Results of the inspection determined the maximum exposure rate to be below the limit of 5 μR/hr above background meeting the criteria for unrestricted use.[5]

Status:

- NRC released the site for unrestricted use in 1987.[2]
- Building 4083 was demolished in 1995.

References:

1- Rocketdyne Report, N001SSR140087, "Radiation Survey for Release for Unrestricted Use – L-85 Reactor Facility," March 6, 1986.
2- Letter from F.J. Miraglia (NRC) to M.E. Remley, "Order Terminating Facility License R-118, for the Rockwell International L-85 Nuclear Examination Reactor," April 8, 1987.
3- Atomics International Document, AI-70-73, "Safety Analysis Report for L-85 Nuclear Examination Reactor," November 25, 1970.
4- Review of Radiation Safety Records Management System, 2003.
5- Letter from Frank Wenslawski (NRC Region V) to Herbert Berkow, "Closeout Inspection for Rockwell International L-85 Reactor, Docket No. 50-375," March 19, 1987.
6- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
7- Historical Site Photographs from Boeing Database.

Photograph 1 – Building 4083 and 4103

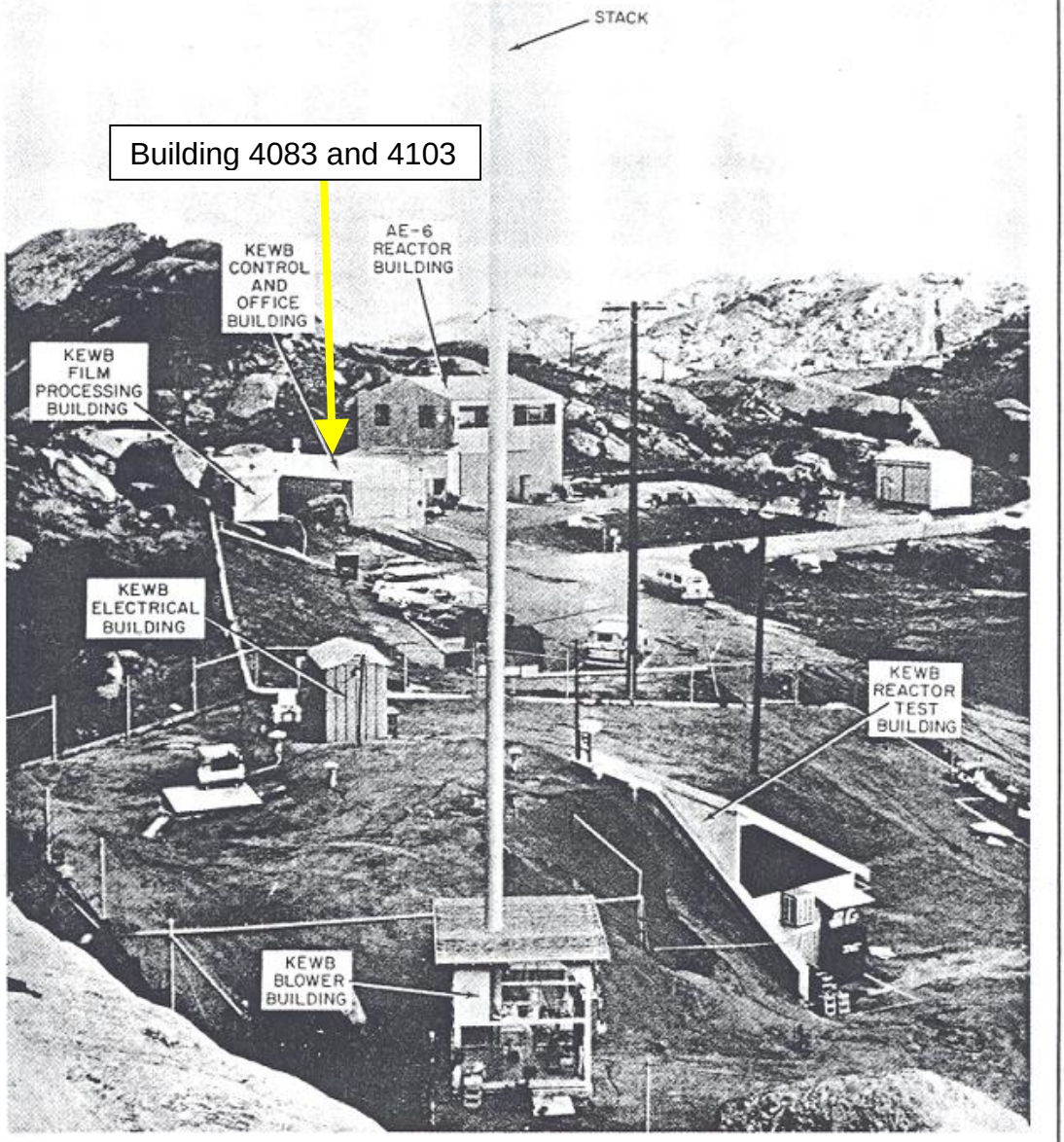
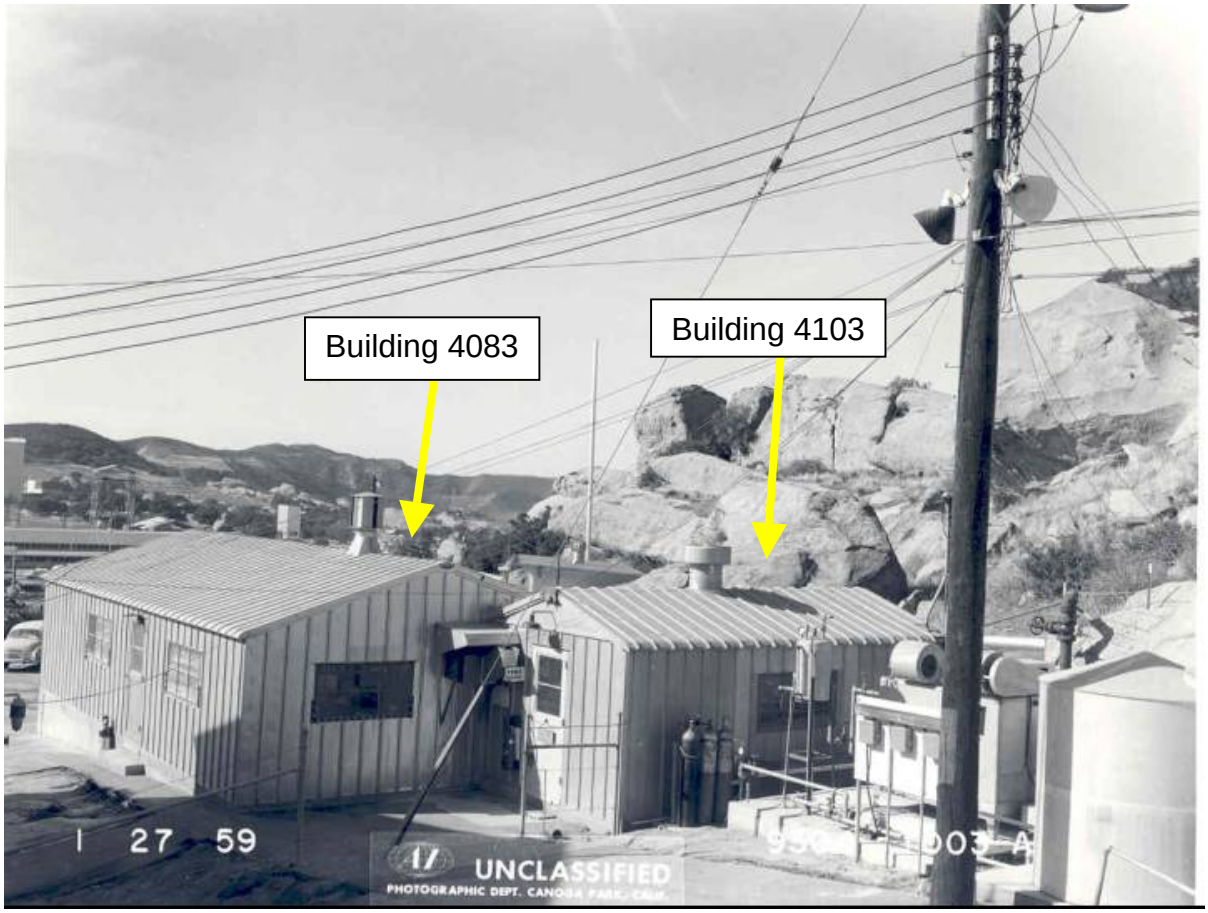


Figure 2 - Photograph of Kinetic Experiment Water Boiler Area and Facilities

FORM 719-P REV. 3-73

Photograph 2 – Building 4083 and 4103



Site Summary – Building 4093

Site Identification:

Building 4093
Neutron Radiography Building
AE-6 Reactor
Reactor L-85
Includes Site 4893, Pad (AE-6)

Operational Use/History:

- Constructed in 1958.
- Building 4093 was constructed to house the AE-6 Reactor.
- The AE-6 Reactor was originally called the Water Boiler Neutron Source (WBNS) reactor. Built in 1952 in Downey, CA, the WBNS had a maximum power of 0.5 Wt. The WBNS was modified to produce a maximum power of 3 kWt and moved to Santa Susana Field Laboratory (SSFL), where it was referred to as the AE-6 Reactor.
- Ownership was transferred from AEC to Rockwell in 1972, and the reactor was renamed L-85.
- The NRC licensed the facility in 1972 (R-118 Docket No. 50-375) and it operated until February 29, 1980.[1]
- Demolition began in 1982 with removal of uranyl sulfate. The rest of the building, excluding the foundation, was demolished in 1995.
- The sanitary leachfield for Building 4093 was removed in 1999.
- The site was released for unrestricted use by NRC and the NRC license was terminated March 19, 1987.[2]

Site Description:

- Building 4093 was constructed of steel beam frames, wood frames, sheet metal and concrete. It contained a 12 x 31-foot control room and a 31 x 38-foot high bay. The reactor had various forms of concrete structures for shielding (e.g., logs, blocks and walls).[3] The building was connected to a sanitary leach field, which was removed in 1999.
- Serviced by Pad 4893.

Relevant Site Information:

- Reactor fuel for the L-85/AE-6 reactor consisted of U-235 (93.11% enrichment), dissolved as uranyl sulfate in 12.5*l* of 0.35 molar H_2SO_4 solution.[3] The radionuclides of concern are Co-60, Cs-137, Eu-152, Eu-154, Sr-90, U-238 and U-235.

- There have been three incidents associated with Building 4093 that may have resulted in a release to the environment:
    - On March 25, 1959, fission gas was released into the air, contaminating part of the high bay and employees. Contamination levels were measured from 7.5 mR/hr to 13 mR/hr (A0275).
    - On July 30, 1982, rinse water contaminated with 5 ml of U-235 was spilled during the fuel draining operation, contaminating an employee and an area of the high bay floor. The area was partially decontaminated at the time and fully decontaminated during facility decommissioning (A0106).
    - On May 24, 1995, a radioactive high efficiency particulate air (HEPA) filter was found in a pile of debris. The filter was taken to RMHF, where it was packaged for disposal as low-level radioactive waste (A0661).

Radiological Surveys:

- In 1985, Rocketdyne conducted a final radiological survey, releasing the final report in March 1986. (The survey included buildings 4073, 4074, 4083, 4084, 4093, 4453 and 4453). [1]
    - Soil samples showed no evidence of radioactivity due to facility operations.
    - Maximum average alpha: 63.0 dpm/100cm^2 (limit is 5,000 dpm/100cm^2).
    - Maximum average beta: 3102 dpm/100cm^2 (limit is 5,000 dpm/100cm^2).
    - The maximum ambient exposure rate was originally found to be 21.3 μR/hr (limit is 18.9 μR/hr). The concrete was removed from areas measuring over the limit and the re-survey showed them all to be under the limit, with the highest measurement at 18.2 μR/hr.
    - Survey results were below the acceptable limits.
- Oak Ridge Associated Universities conducted a confirmatory survey in 1986; the final report was released in December 1986. (The survey included Buildings 4073, 4084, 4093 and 4453.)[4]
    - The survey concluded that the L-85 reactor building (4093) had been remediated to the existing NRC criteria with the exception of exposure rate criteria. Restoration of the remediated area would reduce the exposure rate to the levels established by the Dismantling Order.
- NRC conducted a decommissioning inspection in 1987. The results of the inspection determined the maximum exposure rate to be below the limit of 5 μR/hr above background, meeting the criteria for unrestricted use.[5]
- In 1999, confirmatory samples collected after the removal of the septic tank found no detectable activity (limit was 20 dpm/100cm^2 for alpha and 100 dpm/100 cm^2 for beta). [6]

Status:

- NRC released site for unrestricted use March 19, 1987.[2]
- The facility was demolished leaving only the foundation in 1995.

References:

1- Rocketdyne Report, N001SSR140087, "Radiation Survey for Release for Unrestricted Use – L-85 Reactor Facility," March 6, 1986.
2- Letter from F.J. Miraglia (NRC) to M.E. Remley, "Order Terminating Facility License R-118, for the Rockwell International L-85 Nuclear Examination Reactor," April 8, 1987.
3- Atomics International Document, AI-70-73, "Safety Analysis Report for L-85 Nuclear Examination Reactor," November 25, 1970.
4- Oak Ridge Associated Universities, no document number, "Confirmatory Radiological Survey of the L-85 Reactor Facility, Rocketdyne Division, Rockwell International Corporation, Santa Susana, California," December 1986.
5- Letter from Frank Wenslawski (NRC Region V) to Herbert Berkow, "Closeout Inspection for Rockwell International L-85 Reactor, Docket No. 50-375," March 19, 1987.
6- Boeing Radiation Survey Reports, L-85 Facility Septic Tank Area, July and September 1999.
7- Historical Site Photographs from Boeing Database.
8- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.

Photograph 1 – Building 4093

Photograph 2 – Building 4093

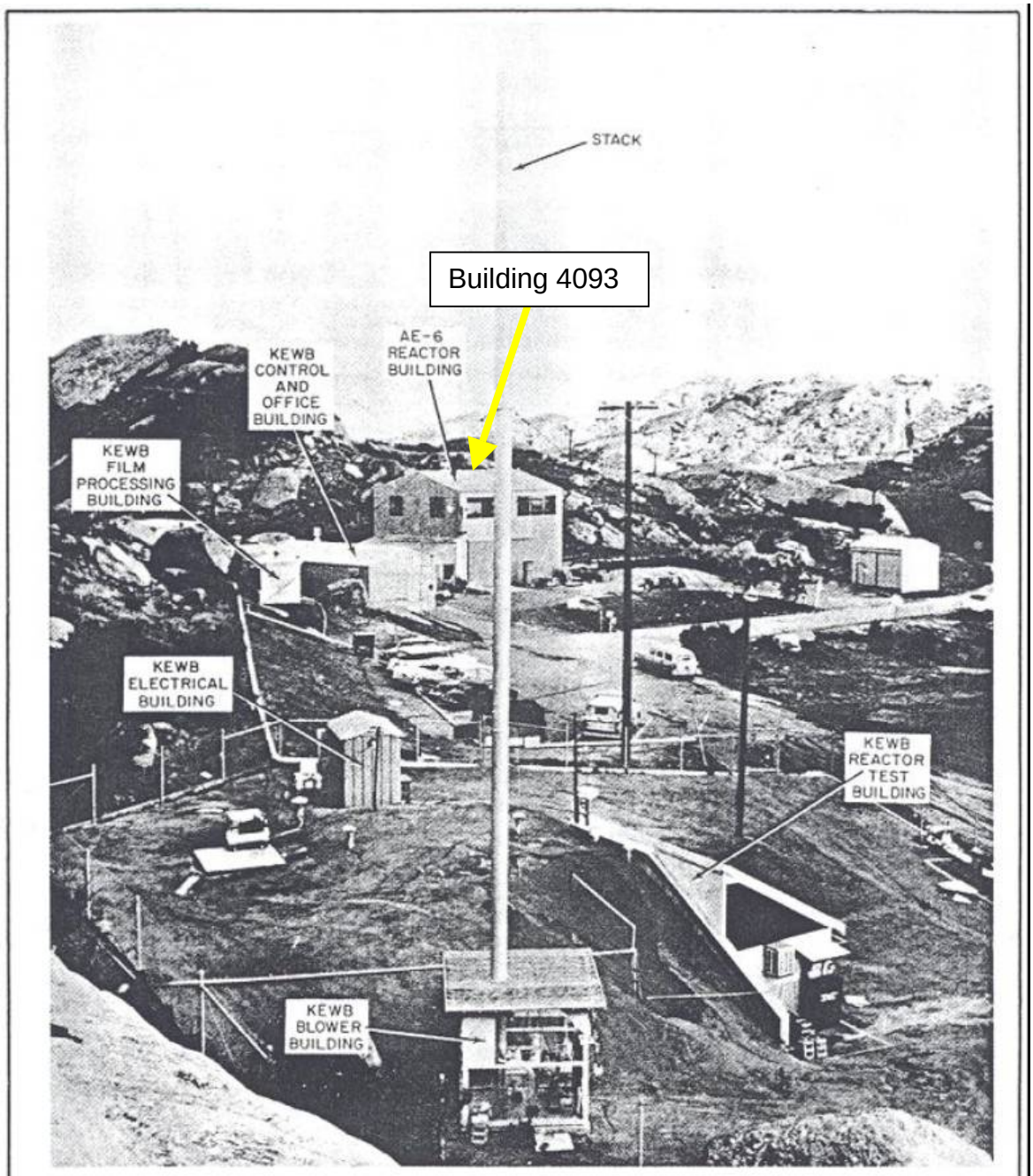


Figure 2 - Photograph of Kinetic Experiment Water Boiler Area and Facilities

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Site Summary – Building 4123

Site Identification:

Building 4123
KEWB Waste Storage Building

Operational Use/History:

- Constructed in the early 1950s.
- Building 4123 was used for the temporary storage of radiological waste material.
- Demolished in 1975.
- On March 3, 1976, the ERDA released the land on which Building 4123 had been located for unrestricted use.[1]

Site Description:

- Building 4123 was a small above-ground concrete block structure with two steel-lined concrete wells (6 feet deep and 2 feet wide) in the floor.

Relevant Site Information:

- There are no Use Authorizations and no Incident Reports associated with Building 4123.[2]

Radiological Surveys:

- In 1975, Rocketdyne performed a final radiological survey during D&D of the facility, publishing the results in the final D&D report in 1976.[1]
    - The survey found that all remaining surfaces were decontaminated to levels as low as reasonably achievable, and in all cases below the levels for future unrestricted use (removable contamination of 20 dpm/100cm$^2\alpha$ or 100dpm/100cm$^2\beta$).
    - The survey concluded that the site was free of radioactivity except for normal background.
- In July 1975, Rocketdyne performed a surface scan of the KEWB site to validate that no radiological contamination remained.[3]
    - The survey found no levels of beta-gamma surface contamination above the measured background (0.15 – 0.25 mrad/hr).
- In May 1983, Argonne National Laboratories performed a post remediation radiological survey to verify that the site was free of radioactivity except for normal background.[4]
    - The survey performed a surface scan to determine the ambient gamma exposure rate and low-level radiation level. Also soil samples were collected and analyzed for gamma radiation and uranium.

  - The survey found no measurements above background. Background is relatively high (40 μR/hr and 8,000 cts/min) due to the shine from nearby Buildings 4021 and 4022.
  - The survey concluded that the site could be released for unrestricted use.
- In August 1988, Rocketdyne performed a surface scan of the terrains measuring the ambient gamma exposure rate to ensure no contamination exists as a result of radioactive materials movement.[5]
  - Mean ambient gamma: 17.4 ± 0.96 μR/hr.
  - Background: 17.0 μR/hr.
  - Acceptable limit: 5.0 μR/hr above background.
  - Survey results were below the acceptable limits.

Status:

- Building 4123 was demolished in 1975.
- The Energy Research and Development Administration released the land on which Building 4123 had been located and the surrounding area for unrestricted use in 1976.[6]

References:

1- Rockwell International Report, AI-ERDA-13159, "KEWB Facilities Decontamination and Disposition Final Report," February 25, 1976.
2- Review of Radiation Safety Records Management System, 2003.
3- Letter from R.K. Owen (Rockwell International) to R.J. Tuttle, "Radiation Survey – T073 (KEWB) Site," July 17, 1975.
4- Argonne National Laboratory Report, no document number, "Surplus Facilities Management Program, Interim Post Remedial Action Survey Report for Kinetic Experiment Water Boiler (KEWB) Facility, Santa Susana Field Laboratory, Rockwell International, Canoga Park, California," May 1983.
5- ETEC Document, GEN-ZR-0009, "Radiological Survey of the T513 Parking Lot; Old R/A Laundry Area; Plot 333; and Areas Between the SRE to RMDF, and KEWB to RMDF," August 26, 1988.
6- Letter from Stanley Stamp (ERDA) to W. F. Heine, "Decontamination and Disposition of ERDA Facilities," March 3, 1976.
7- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.

Site Summary – Building 4453

Site Identification:

Building 4453
AE-6 Fuel Handling Building

Operational Use/History:

- Constructed in 1958.
- Fuel for the L-85 reactor in the form of uranyl sulfate was handled in Building 4453.
- Ownership of Building 4453 was transferred from AEC to Rockwell in 1972.
- The NRC licensed the facility on January 5, 1972 (R-118 Docket No. 50-375).[1]
- Demolished in 1980. The foundation and concrete remain.
- Building 4453 was released for unrestricted use by NRC and the NRC license terminated March 19, 1987.[2]

Site Description:

- Building 4453 consisted of a steel frame covered in sheet metal.[3]

Relevant Site Information:

- Fuel for the L-85 reactor in the form of uranyl sulfate was handled in Building 4453. Accordingly, the contaminant of concern is uranium.[1]
- There are no Use Authorizations associated with Building 4453.[4]
- No incidents in which contamination may have been released the environment occurred in Building 4453.[4]

Radiological Surveys:

- In 1985, Rocketdyne conducted a final radiological survey, releasing the final report in March 1986. (The survey included Buildings 4073, 4074, 4083, 4084, 4093, 4453 and 4453). [1]
    - Soil samples showed no evidence of radioactivity due to facility operations.
    - Maximum average alpha: 17.2 dpm/100cm^2 (limit is 5,000 dpm/100cm^2).
    - Maximum average beta: 1987 dpm/100cm^2 (limit is 5,000 dpm/100cm^2).
    - The maximum ambient exposure rate was originally found to be 23.1 μR/hr (limit is 18.9 μR/hr). The ambient exposure rates over the limit were attributed to the nearby RMDF and do not represent residual contamination.
    - Survey results were below the acceptable limits.
- NRC conducted a decommissioning inspection in 1987. Results of the inspection determined the maximum exposure rate to be below the limit of 5 μR/hr above background meeting the criteria for unrestricted use.[5]

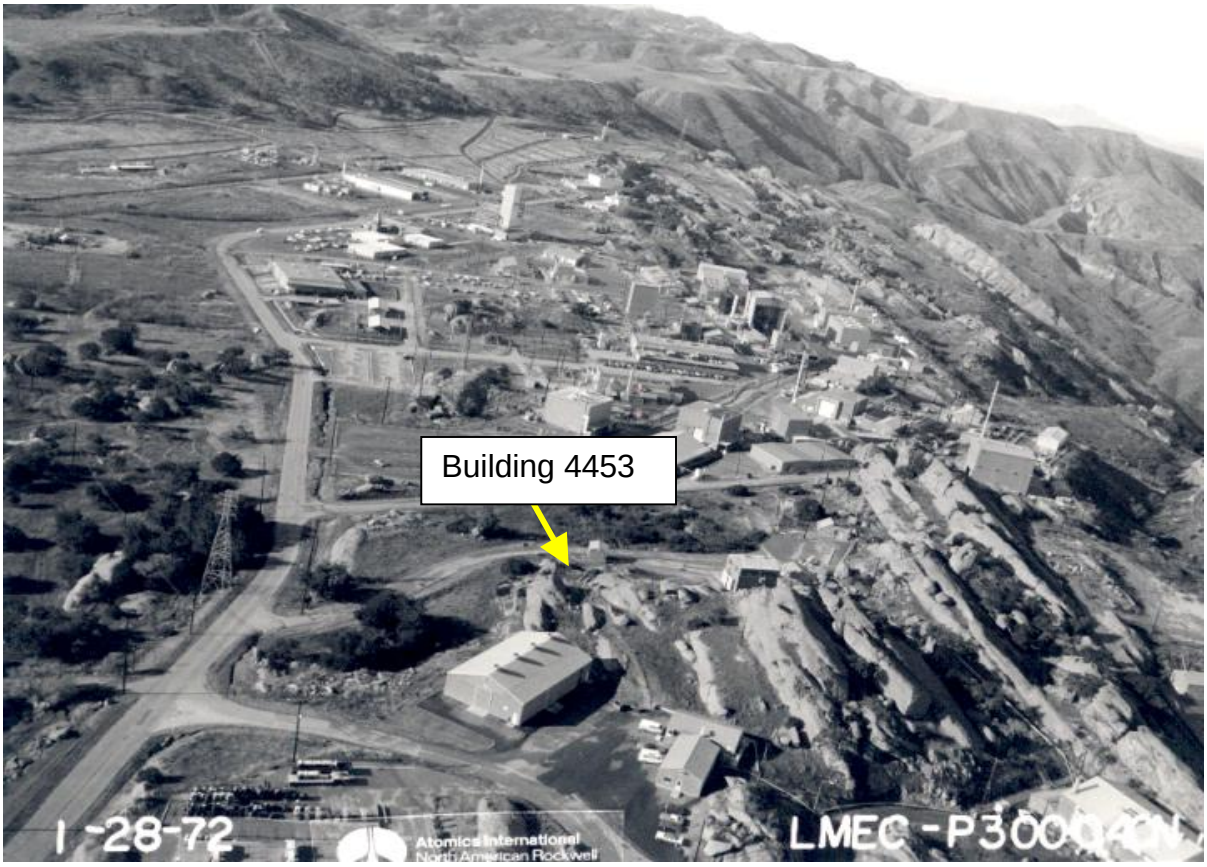
Status:

- NRC released Building 4453 for unrestricted in 1987.[2]
- Building 4453 was demolished in 1995.

References:

1- Rocketdyne Report N001SSR140087, "Radiation Survey for Release for Unrestricted Use – L-85 Reactor Facility," March 6, 1986.
2- Letter from F.J. Miraglia (NRC) to M.E. Remley, "Order Terminating Facility License R-118, for the Rockwell International L-85 Nuclear Examination Reactor," April 8, 1987.
3- Atomics International Document, AI-70-73, "Safety Analysis Report for L-85 Nuclear Examination Reactor," November 25, 1970.
4- Review of Radiation Safety Records Management System, 2003.
5- Letter from Frank Wenslawski (NRC Region V) to Herbert Berkow, "Closeout Inspection for Rockwell International L-85 Reactor, Docket No. 50-375," March 19, 1987.
6- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
7- Historical Site Photographs from Boeing Database.

Photograph – Building 4453



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Site Summary – Parking Lot 4523

Site Identification:

Site 4523
Parking Lot

Operational Use/History:

- Constructed in the 1950s. [1,2]
- Site 4523 was a parking lot used by personnel working in L-85, KEWB and the adjacent facilities.
- Site 4523 was demolished.[1,2]

Site Description:

- Site 4523 was located between the L-85 and KEWB facilities.

Relevant Site Information:

- There are no Use Authorizations and no Incident Reports associated with Site 4523.[3]

Radiological Surveys:

- Radiological surveys specific to Site 4523 have not been conducted.

Status:

- Site 4523 has been demolished, and the area is now covered with vegetation.

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Historical Site Photographs from Boeing Database.
3- Review of Radiation Safety Records Management System, 2003.

Photograph – Site 4523

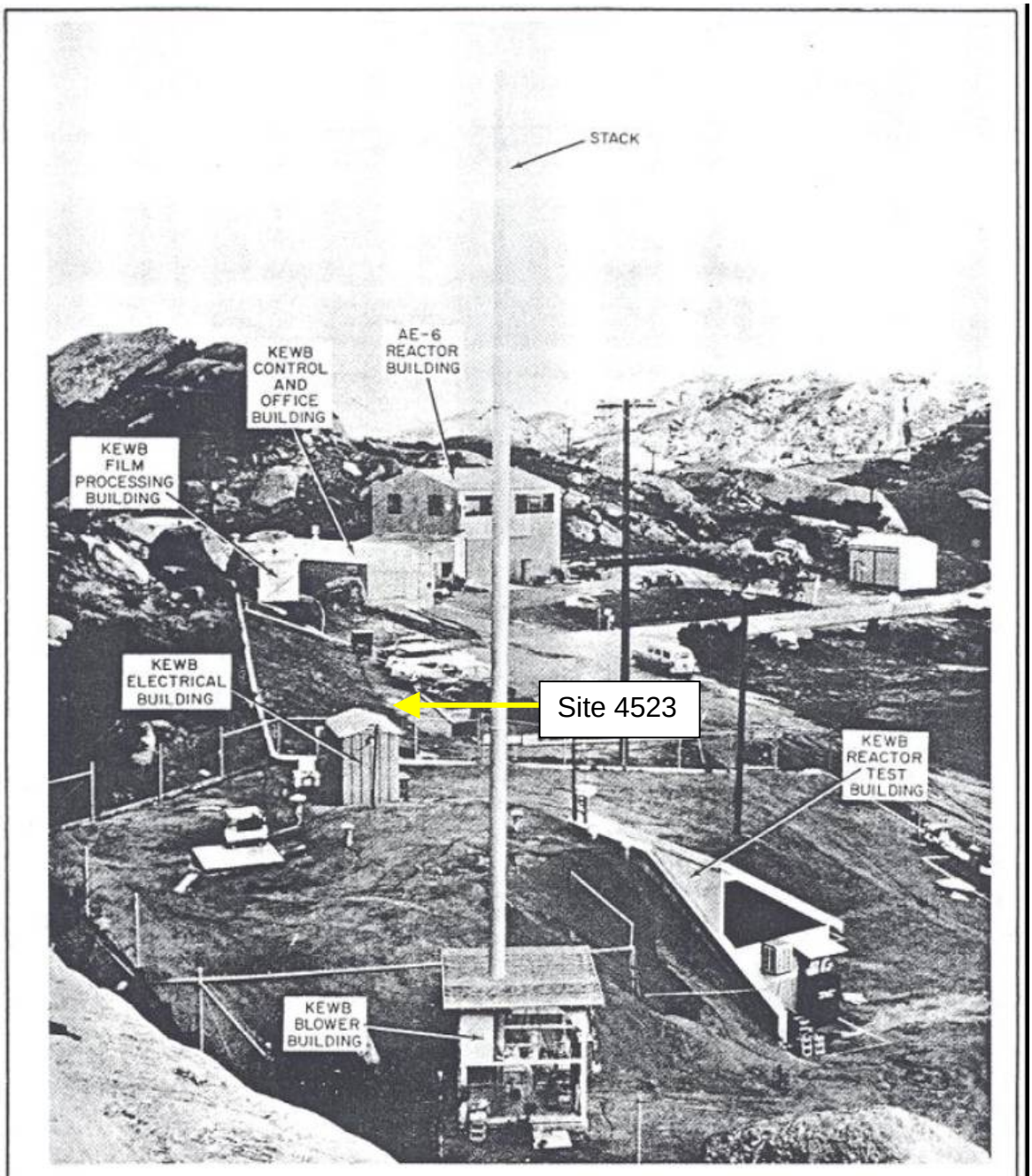

Figure 2 - Photograph of Kinetic Experiment Water Boiler Area and Facilities

FORM 719-P REV. 3-73

Site Summary – Site 4633

Site Identification:

Site 4633
Reactor Cooling Water Pad

Operational Use/History:

- Constructed prior to 1962.[1]
- There is no record of activities associated with Site 4633.
- Demolished in the late 1980s.

Site Description:

- Site 4633 was located northeast of Parking Lot 4523.

Relevant Site Information:

- Regulated radiological materials were not handled in Site 4633.
- There are no Use Authorizations and no Incident Reports associated with Site 4633.[2]

Radiological Surveys:

- Radiological surveys specific to Site 4633 have not been conducted.

Status:

- Site 4633 was demolished.

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Review of Radiation Safety Records Management System, 2003.

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Site Summary – Building 4643

Site Identification:

Building 4643
KEWB Exhaust Building

Operational Use/History:

- Constructed in early the 1950s.
- Building 4643 was an exhaust building that provided ventilation for the KEWB reactor building.
- Demolished in 1975.
- The land on which Building 4643 was located was released for unrestricted use on March 3, 1976, by the ERDA.[1]

Site Description:

- Building 4643 was a small mechanical building with a 60-foot exhaust stack. It was located near Parking Lot 4523.

Relevant Site Information:

- There are no Use Authorizations and no Incident Reports associated with Site 4643.[2]

Radiological Surveys:

- In July 1975, Rocketdyne performed surface scans of the KEWB site to validate that no radiological contamination remained.[3]
    - The survey found no levels of beta-gamma surface contamination above the measured background (0.15 – 0.25 mrad/hr).
    - The survey concluded that there was no radiation above background levels observed away from the site.
- In 1976, Rocketdyne performed a final radiological survey during D&D of the facility; the results were published in the final D&D report.[4]
    - The survey found that all remaining surfaces were decontaminated to levels as low as reasonably achievable; in all cases below the levels for future unrestricted use (removable contamination of 20 dpm/100cm$^2\alpha$ or 100 dpm/100cm$^2\beta$).
    - The survey concluded that the site was free of radioactivity except for normal background.
- In May 1983, Argonne National Laboratories performed a post remediation radiological survey to verify that the site was free of radioactivity except for normal background.[5]

  - The survey performed a surface scan to determine the ambient gamma exposure rate and low-level radiation level. Soil samples were collected and analyzed for gamma radiation and uranium.
  - The survey found no measurements above background. Background is relatively high (40 μR/h and 8,000 cts/min) due to the shine from nearby Buildings 4021 and 4022.
  - The survey concluded that the site could be released for unrestricted use.
- On August 1988, Rocketdyne performed a surface scan of the terrain measuring ambient gamma exposure rates to ensure that no contamination existed as a result of radioactive materials movement.[6]
  - Mean ambient gamma: 17.4 ± 0.96 μR/hr.
  - Background: 17.0 μR/hr.
  - Acceptable limit: 5.0 μR/hr above background.
  - The survey results found no contamination above background levels.

Status:

- Building 4643 was demolished in 1975.
- The Energy Research and Development Administration released the land on which Building 4643 was located and the surrounding area for unrestricted use in 1976.[1]

References:

1- Letter from Stanley Stamp (ERDA) to W. F. Heine, "Decontamination and Disposition of ERDA Facilities," March 3, 1976.
2- Review of Radiation Safety Records Management System, 2003.
3- Letter from R.K. Owen (Rockwell International) to R.J. Tuttle, "Radiation Survey – T073 (KEWB) Site," July 17, 1975.
4- Rockwell International Report, AI-ERDA-13159, "KEWB Facilities Decontamination and Disposition Final Report," February 25, 1976.
5- Argonne National Laboratory, no document number, "Surplus Facilities Management Program, Interim Post Remedial Action Survey Report for Kinetic Experiment Water Boiler (KEWB) Facility, Santa Susana Field Laboratory, Rockwell International, Canoga Park, California," May 1983.
6- ETEC Document, GEN-ZR-0009, "Radiological Survey of the T513 Parking Lot; Old R/A Laundry Area; Plot 333; and Areas Between the SRE to RMDF, and KEWB to RMDF," August 26, 1988.
7- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
8- Historical Site Photographs from Boeing Database.

Photograph – Building 4643

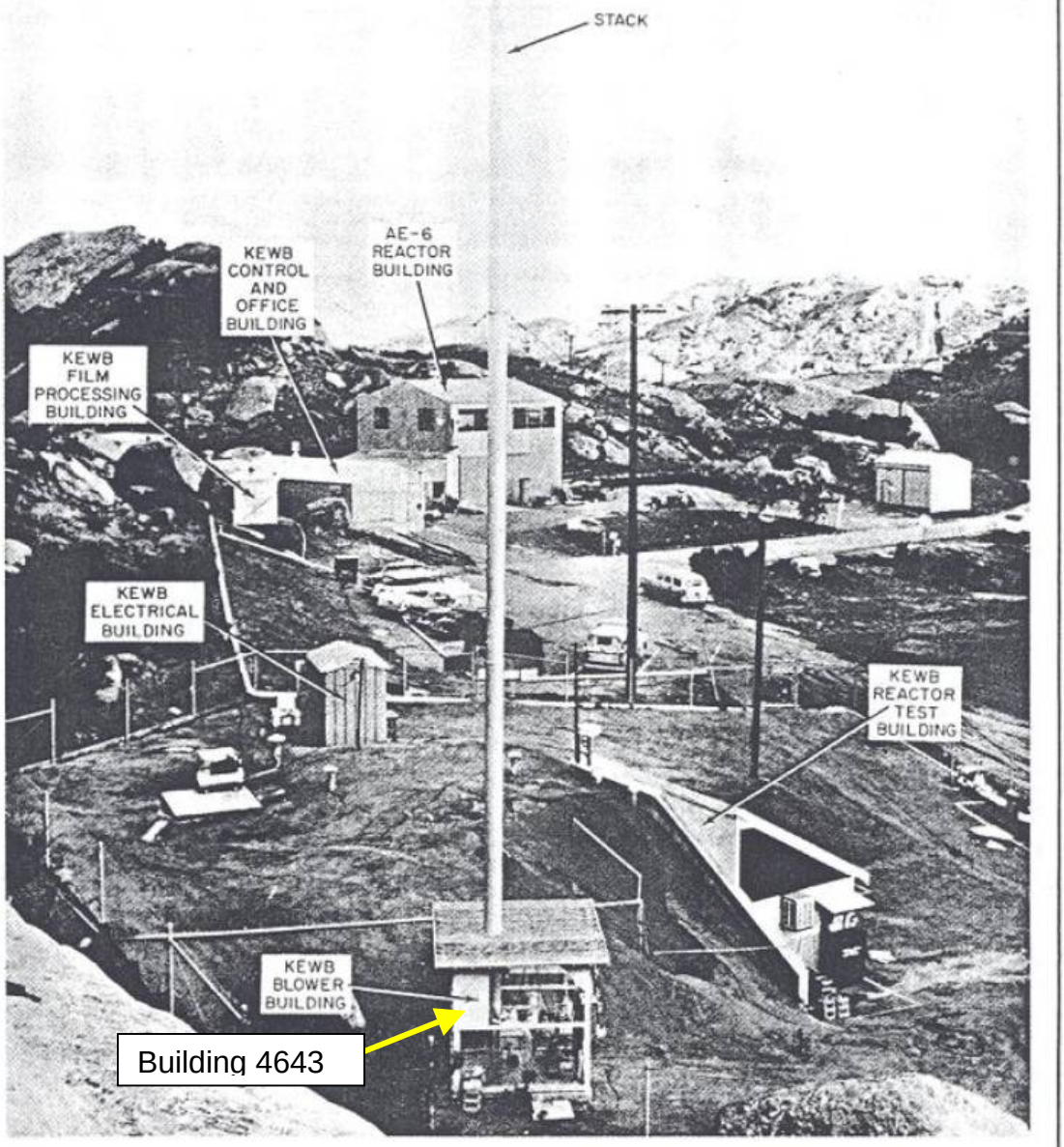

Figure 2 - Photograph of Kinetic Experiment Water Boiler Area and Facilities

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Site Summary – Building 4793

Site Identification:

Building 4793
KEWB Electrical Building

Operational Use/History:

- Constructed in the early 1950s.
- Building 4793 housed the heating and air conditioning systems for the KEWB reactor building.
- Demolished in 1975.
- The land on which Building 4793 was located was released for unrestricted use March 3, 1976, by the ERDA.[1]

Site Description:

- Building 4793 was a small above-ground mechanical building located east of the KEWB reactor building.

Relevant Site Information:

- There are no Use Authorizations and no Incident Reports associated with Building 4793.[2]

Radiological Surveys:

- In 1975, Rocketdyne performed a final radiological survey during D&D of the facility; the results were published in the final D&D report in 1976.[3]
    - The survey found that all remaining surfaces were decontaminated to levels as low as reasonably achievable; in all cases below the levels for future unrestricted use (removable contamination of 20 dpm/100cm$^2\alpha$ or 100 dpm/100cm$^2\beta$).
    - The survey concluded that the site was free of radioactivity except for normal background.
- In July 1975, Rocketdyne performed surface scans of the KEWB to confirm that no radiological contamination remained.[4]
    - The survey found no levels of beta-gamma surface contamination above the measured background (0.15 – 0.25 mrad/hr).
    - The survey concluded that there was no radiation above background levels.
- In May 1983, Argonne National Laboratories performed a post remediation radiological survey to verify that the site was free of radioactivity except for normal background.[5]

  - The survey performed a surface scan to determine the ambient gamma exposure rate and low-level radiation levels. Soil samples were collected and analyzed for gamma radiation and uranium.
  - The survey found no measurements above background. Background is relatively high (40 μR/hr and 8,000 cts/min) due to the shine from nearby Buildings 4021 and 4022.
  - The survey concluded that the site could be released for unrestricted use.
- In August 1988, Rocketdyne performed surface scans measuring ambient gamma exposure rates to ensure that no contamination existed as a result of radioactive materials movement.[6]
  - Mean ambient gamma: 17.4 ± 0.96 μR/hr.
  - Background: 17.0 μR/hr.
  - Acceptable limit: 5.0 μR/hr above background.
  - The survey found no contamination above background levels.

Status:

- Building 4793 was demolished in 1975.
- The Energy Research and Development Administration released the land on which Building 4793 was located and the surrounding area for unrestricted use in 1976.[1]

References:

1- Letter from Stanley Stamp (ERDA) to W. F. Heine, "Decontamination and Disposition of ERDA Facilities," March 3, 1976.
2- Review of Radiation Safety Records Management System, 2003.
3- Rockwell International Report, AI-ERDA-13159, "KEWB Facilities Decontamination and Disposition Final Report," February 25, 1976.
4- Letter from R.K. Owen (Rockwell International) to R.J. Tuttle, "Radiation Survey – T073 (KEWB) Site," July 17, 1975.
5- Argonne National Laboratory, no document number, "Surplus Facilities Management Program, Interim Post Remedial Action Survey Report for Kinetic Experiment Water Boiler (KEWB) Facility, Santa Susana Field Laboratory, Rockwell International, Canoga Park, California," May 1983.
6- ETEC Document, GEN-ZR-0009, "Radiological Survey of the T513 Parking Lot; Old R/A Laundry Area; Plot 333; and Areas Between the SRE to RMDF, and KEWB to RMDF," August 26, 1988.
7- Historical Site Photographs from Boeing Database.
8- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.

Photograph – Building 4793

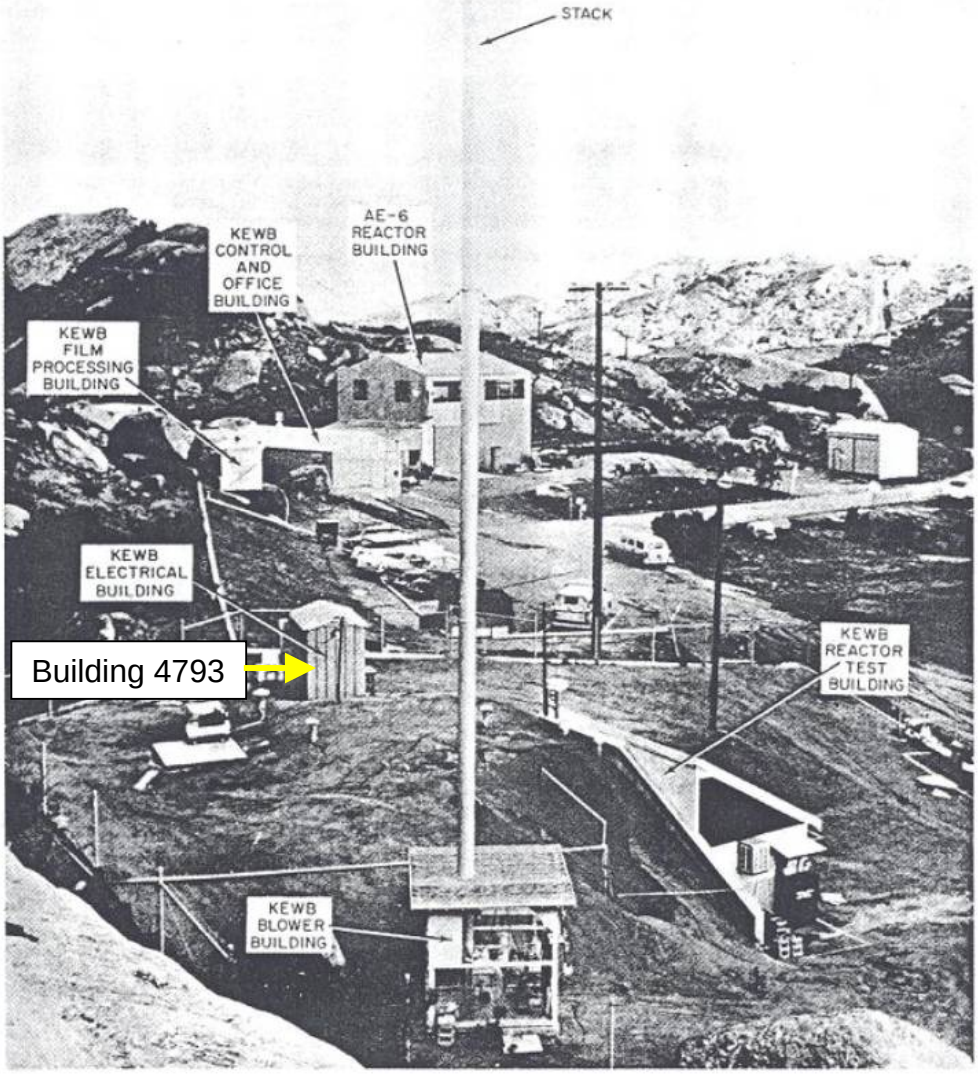

Figure 2 - Photograph of Kinetic Experiment Water Boiler Area and Facilities

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Group I

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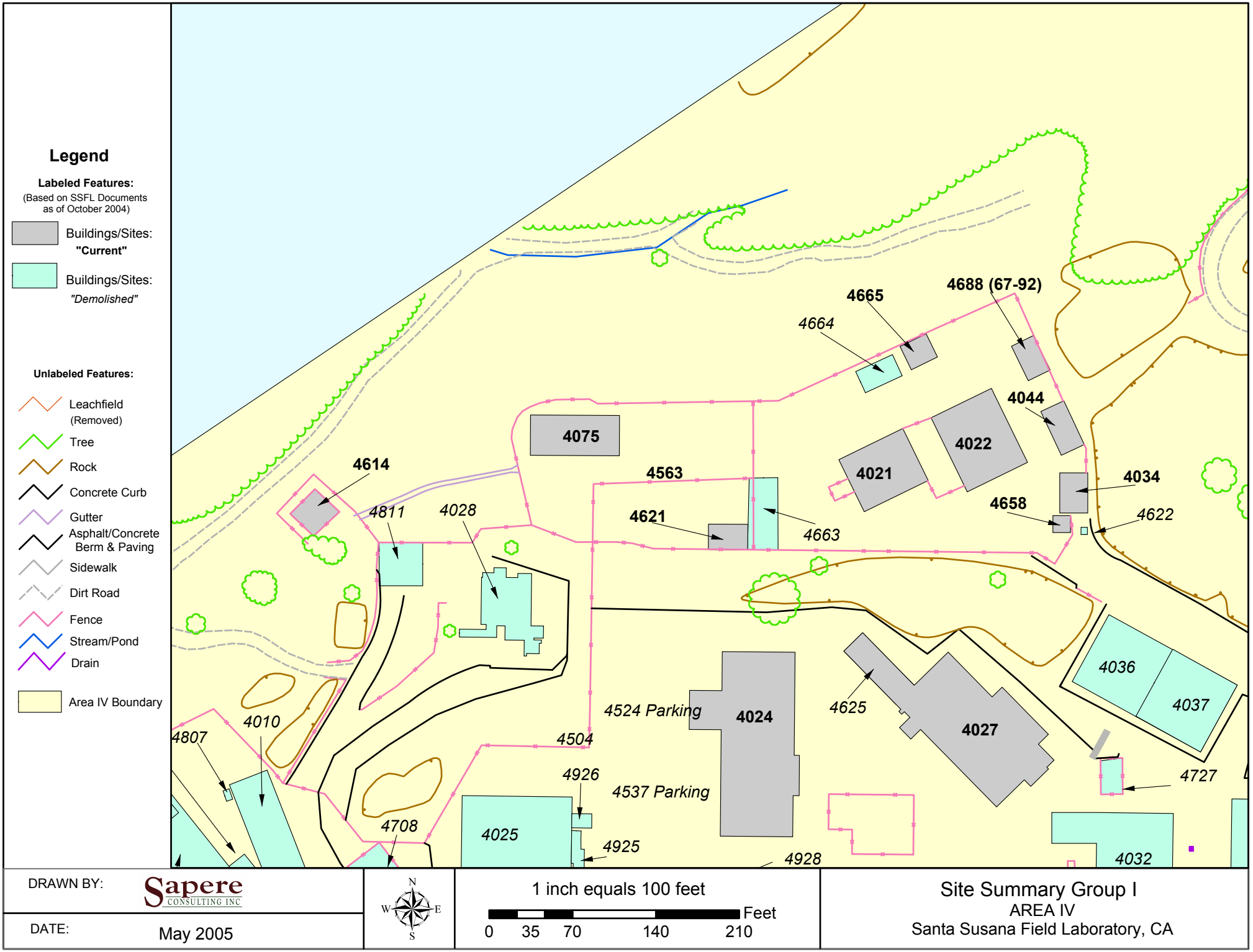
Legend
Labeled Features:
(Based on SSFL Documents as of October 2004)
Buildings/Sites: "Current"
Buildings/Sites: "Demolished"
Unlabeled Features:
Leachfield (Removed)
Tree
Rock
Concrete Curb
Gutter
Asphalt/Concrete Berm & Paving
Sidewalk
Dirt Road
Fence
Stream/Pond
Drain
Area IV Boundary
4665
4688 (67-92)
4664
4044
4075
4022
4021
4614
4563
4034
4811
4028
4621
4658
4622
4663
4036
4037
4524 Parking
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AREA IV
Santa Susana Field Laboratory, CA

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Site Summary – Building 4021

Site Identification:

Building 4021
Radioactive Material Handling Facility (RMHF) Waste Decontamination and Packaging
Radioactive Material Disposal Facility (RMDF) Waste Decontamination and Packaging

Operational Use/History:

- Constructed in 1959.
- Building 4021 has been used during decommissioning programs to process waste materials from the Sodium Reactor Experiment (SRE), Southwest Experimental Fast Oxide Reactor (SEFOR), Experimental Breeder Reactor (EBR), Fermi Reactor, Systems for Nuclear Auxiliary Power (SNAP) and other on-site programs.[1]
- Building 4021 is still active and continues to be used as a processing area for wastes from various on-site decontamination and decommissioning (D&D) programs.

Site Description:

- Building 4021 is a 3,000-square-foot single-story metal building that consists of a decontamination room, packaging room, hot and cold change rooms and an office area. Floor drains in the building discharge to a sump located at the west side of the building. The water system was once connected to a flocculation tower on the northern fence line of RMHF. The building is connected to a high-efficiency particulate air (HEPA) filtered exhaust system that is located between Buildings 4021 and 4022. This system discharges through a stack connected to Building 4022. Prior to 1961, this facility was connected to a leach field located north of the facility, outside of the fence line.[1]

Relevant Site Information:

- Radioactive materials were handled in Building 4021 primarily in the form of mixed fission products and fuels.
- Multiple incidents have occurred at this facility. The following are incidents which may have involved releases to the environment:
    - On June 10, 1964, an explosion and fire broke out in a storage can as a result of a sodium reaction. Contaminated smoke caused increased levels of airborne contamination, though the smoke did not escape the building (A0408).
    - On July 21, 1964, an explosion and fire broke out in a storage can as a result of a sodium reaction. Contaminated smoke caused increased levels of airborne contamination, though the smoke did not escape the building (A0413).
    - On December 22, 1964, a component from the Sodium Reactor Experiment was taken to Building 4021 for decontamination. The component had water in

it, which leaked when a plastic covering broke. As a result, a concrete pad, asphalt, and a forklift required decontamination (A0448).
    - On May 13, 1965, the flocculation tower overflowed, spilling radioactive water onto equipment, the pad and the surrounding soil (A0489).
    - On November 11, 1966, a water evaporator pan caught fire, causing the filters to plug and collapse. Sampling indicated that no significant release of radioactive materials occurred (A0297).
    - On November 3, 1976, the leach field connected to the building was found to be contaminated at levels up to 200 mrad/hr (A0056).
    - On February 15, 1978, the contaminated leach field flooded with rainwater, resulting in the release of water contaminated with Sr-90 at a level of 4×10^5 µCi/ml gross beta activity (A0064).
    - On October 3, 1997, four concrete blocks in the parking lot were found to have beta contamination ranging from 100 to 800 counts per minute. The concrete blocks were decontaminated, resurveyed and released without radiological restrictions (A0680).
- The following activities occurred relating to the leach field associated with Building 4021:[2,3,4]
    - The RMHF leach field was constructed in the spring of 1959 as a sanitary sewer leach field.
    - In 1961, the leach field became unnecessary when the Area III sewage disposal system began accepting sanitary waste.
    - In the fall of 1962 or spring of 1963, a valve to the RMHF radioactive water processing system was inadvertently left partially open and allowed an unknown amount of contaminated water to enter the leach field system.
    - In 1976, contamination of the leach field was discovered and decontamination and removal plans were prepared. Levels of contamination were as high as 115,000 pCi/g.
    - Decontamination and removal activities occurred from 1976 to 1978. Approximately 36,250 cubic feet of contaminated soil and sludge were shipped to radioactive waste disposal sites. An estimated 0.6 mCi of radioactive material remains sequestered in inaccessible recesses and three contaminated cracks in the bedrock.
    - During January and February of 1978, heavy rains caused contaminated water to leach out of the soil (see incident A0064 referenced above)

Radiological Surveys:

- A special environmental survey of the RMHF area was performed in January 1966. Gross beta/gamma radioactivity concentrations for samples of soil, vegetation and water were obtained along the north fence (outside), the drum storage yard and in the ravine below the facility.[5]
    - The survey consisted of 17 soil samples, 12 vegetation samples, and 8 water samples
        - Gross beta gamma radioactivity ranged from:

- 26 to 1005 pCi/gram beta-gamma in soil
- 161 to 70,680 pCi/gram beta-gamma in vegetation
- 30 to 30,400 pCi/liter beta-gamma in water

- In 1978, the leach field was surveyed at the end of decontamination activities.[2,3]
  - The survey consisted of 79 random soil samples taken from the surface of the leach field cover.
    - Gross beta activities of the soil ranged from 15 to 46 pCi/g.
  - A complete walk-through survey was also conducted.
    - The maximum gamma exposure rate following backfill was 30 to 50 μR/hr, apparently from stored waste at the RMHF just a few hundred yards away. No contribution from the leach field itself could be detected.
  - The site was left with a minor amount of radioactive material in three cracks in the sandstone rock (estimated 0.6 mCi). The cracks are over 10 feet below the surface and were sealed with bituminous asphalt mastic.
  - Survey results indicated that the site was suitable for unrestricted use.
- In 1981 a survey was conducted to support the RMHF decommissioning. The survey indicated there were low levels of fixed and removable contamination on and in some portions of the RMHF asphalt and in the soil beneath the asphalt paving. There were also spot areas of contamination in the soil outside the north, west and south fence perimeters.[6]
  - There were 37 soil samples collected at the surface and 12 inches below the surface at each sample location and analyzed for gross beta/gamma activity.
    - The activities of the soils at the surface ranged from 21 to 1143 pCi/g
    - The activity of the soil at 12" depth ranged from 20 to 104 pCi/g
- In 1989, soil samples were collected around the RMHF Leach Field. In addition, boulders located on the north slope of the leach field backfill, leading down to, and including the ravine were surveyed for beta radiation.[7]
  - One boulder at the bottom of the ravine was emitting beta radiation above background levels. The highest level was 400,000 dpm/100cm^2
  - 15 soils samples were collected from 6 areas surrounding the leach field
    - Gross alpha ranged from 28.9 to 313.1 pCi/g
    - Gross beta ranged from 26.0 to 2121.0 pCi/g
- In 2000, a survey of the RMHF and surrounding area was conducted.[8]
  - 23 soil samples were collected south, west, and north of the RMHF fenceline and analyzed for Cs-137:
    - 13 samples were <MDA to 1 pCi/g
    - 6 samples were 1 to 10 pCi/g
    - 4 samples were 10 to 53 pCi/g
  - 6 samples were taken from the leach field area
    - 5 samples were typical of background (<0.2 pCi/g)
    - 1 sample was 1.2 pCi/g

- In 2003, 49 soil samples were collected from a localized area outside the south fence of RMHF to characterize the area. Cs-137 was detected in most of the samples.[9]
    - The average Cs-137 concentration was 27 pCi/g, ranging from non-detectable to 124 pCi/g.
    - Following excavation (~12 ft x ~50 ft x ~2 ft), six confirmation samples were collected and the average Cs-137 concentration was lowered to 3.75 pCi/g, ranging from 1.65 to 7.08 pCi/g
- The entire RMHF facility, including Building 4021, will be surveyed and decontaminated for unrestricted use at the time of RMHF closure.

Status:

- Building 4021 is active.
- The Building 4021 leach field was recommended for release for unrestricted use by the Department of Energy (DOE).[2]

References:

1- Rockwell International Document, RMDF-AN-0001, "ETEC RMDF Decontamination and Decommissioning (D&D) Project Management Plan," February 10, 1993.
2- Rockwell International Document, ESG-DOE-13385, "RMDF Leach Field Decontamination Final Report," September 15, 1982.
3- Rockwell International Document, N704TI990042, "Radiological Survey Results—Release to Unrestricted Use, RMDF Leach Field, SSFL," November 29, 1978.
4- Rockwell International Document, ESG-DOE-13365, "Radioactive Materials Disposal Facility Leach Field Environmental Evaluation Report," February 23, 1982.
5- Atomics International Internal Letter from J.D. Moore to R.M. Hill, "Environmental Survey Report, Building 022 Santa Susan Area," January 26, 1966.
6- Rockwell International Document, N704TI990059, " Relevant Information to support RMDF and Interim Storage Facility Decommissioning," November 5, 1981.
7- Rockwell International Internal Letter from J.A. Chapman to R.J. Tuttle, "RMDF Leach Field: Soil samples collected in the General Vicinity May 17, 1989," May 24, 1989.
8- Boeing Data Package, "Results of the RMHF Surrounds Radiological Survey," Phil Rutherford, 2000
9- Boeing Document, RD04-170, "Site Environmental Report for Calendar Year 2003 DOE Operations at The Boeing Company, Rocketdyne Propulsion & Power," September, 2004.
10- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
11- Historical Site Photographs from Boeing Database.

Photograph – Building 4021

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Site Summary – Building 4022

Site Identification:

Building 4022
RMDF Radioactive Vault Storage
RMHF Radioactive Vault Storage

Operational Use/History:

- Constructed in 1959.
- The vaults in Building 4022 have been used for the storage of SRE fuel, SEFOR fuel, EBR-II blanket assemblies, SRE decommissioned waste, plutonium, Fermi Reactor fuel, high-level radioactive waste and other waste from on-site decommissioning activities.[1]
- Building 4022 is active, and continues to be used as a storage area for wastes from decommissioning activities throughout the site. The building also contains a compactor, which is used to size reduce low-level radioactive waste.

Site Description:

- Building 4022 contains seven individual below-grade storage vaults. A high bay metal building and bridge crane are constructed over the underground vaults, which were used to handle materials that were stored in the vaults. One of the vaults contains an 8,000-gallon liquid radioactive waste holdup storage tank. Water from the vaults drains into a sump, which pumps into the Building 4021 holding tank. Air from the building passes through the filter system located between Buildings 4021 and 4022, and is released through the Building 4022 stack.[1]

Relevant Site Information:

- Radioactive materials were handled in Building 4022 primarily in the form of mixed fission products and fuels.
- Multiple incidents were associated with this facility. The incidents involving a possible release to the environment were:
    - On December 29, 1965, drums of contaminated sodium exploded in a rain storm and burned the outside of the building (A0588).
    - On May 21, 1967, a drum of uranium carbide sludge exploded on a truck outside of the building, contaminating asphalt and evaporator equipment. Contamination levels ranged from 300 to 5,000 dpm/100 cm^2. Decontamination of the asphalt and equipment was successful (A0615).
    - On May 21, 1967, a 55-gallon drum containing uranium metal under $CaCO_3$ was found burning in the RMHF storage yard. Workers believed the drum was likely to explode, so three rifle shots were fired into the drum to relieve the pressure building inside. The fire was successfully extinguished and the drum

was left outside to cool overnight. It was then moved to Building 4021 for storage (A0616).

- On May 22, 1978, the sump pump stopped working and contaminated liquid flowed out of a holdup tank, contaminating asphalt, which later contaminated eight truck tires placed on the pavement. Both the tires and the asphalt were decontaminated (A0070).
- On August 14, 1979, a shipping box loaded on a waste truck for offsite disposal leaked radioactive liquid containing Cs-137 and Sr-90 on the asphalt outside RMHF. The area was successfully decontaminated shortly after the incident (A0314).

- Because of the operational and incident history of this building, as well as the entire RMHF facility, the building and its surroundings will be surveyed and decontaminated at the time of RMHF closure.

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Building 4022, during its operation. The results of these surveys are summarized in the 4021 site summary.
- The entire RMHF facility, including Building 4022, will be surveyed and decontaminated for unrestricted use at the time of RMHF closure.

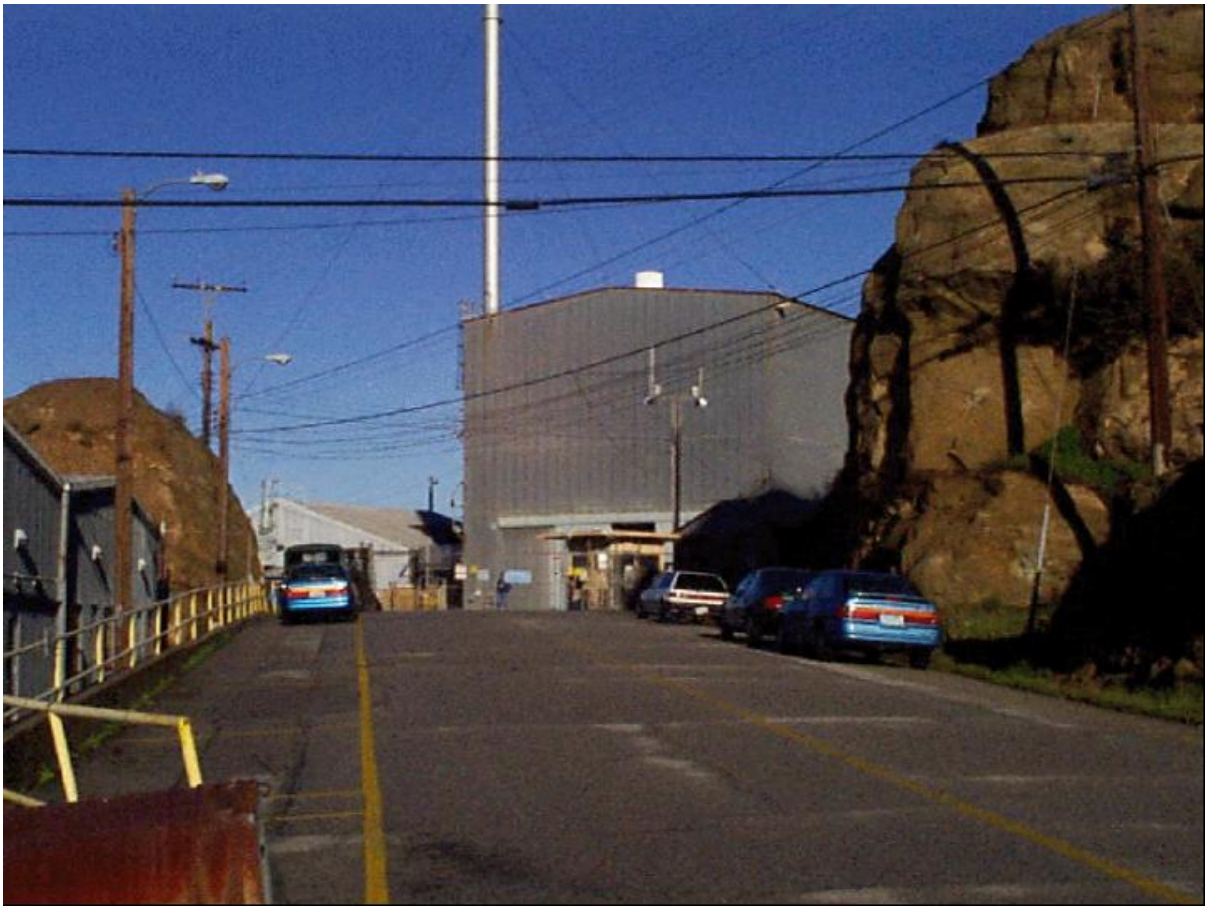
Status:

- Building 4022 is actively used as a storage area for wastes from decommissioning activities throughout the site.

References:

1- Rockwell International Document, RMDF-AN-0001, "ETEC RMDF Decontamination and Decommissioning (D&D) Project Management Plan," February 10, 1993.
2- Historical Site Photographs from Boeing Database.
3- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.

Photograph – Building 4022



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Site Summary – Building 4034

Site Identification:

Building 4034
RMDF Office Building
RMHF Office Building

Operational Use/History:

- Constructed in 1961.
- Building 4034 was an office building for RMDF (which was later referred to as RMHF).
- The facility is active, and serves as the main office and point of entry for RMHF.

Site Description:

- The building is a small (approximately 650 square feet) steel structure consisting of two main office areas and restrooms.[1,2]

Relevant Site Information:

- There are no Use Authorizations and no Incident Reports associated with Building 4034.[3]

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Building 4034, during its operation. The results of these surveys are summarized in the 4021 site summary.
- Routine quarterly radiation surveys are conducted in this office building to verify that it has not become contaminated.[4]

Status:

- This facility is active.

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Historical Site Photographs from Boeing Database.
3- Review of Radiation Safety Records Management System, 2003.
4- Personnel Interview, Phil Rutherford, February 2004.

Photograph – Building 4034

Site Summary – Building 4044

Site Identification:

Building 4044
RMDF Clean Shop
RMDF Support Lab
RMHF Support Lab

Operational Use/History:

- Constructed in the middle 1960s.
- Building 4044 has served various purposes throughout the life of the RMDF/RMHF including as a clean shop, health physics offices and as a break room.
- The facility is active and contains the break room and health physics offices for RMHF.

Site Description:

- Building 4044 is approximately 1,000 square feet, and is located along the east border of the RMHF complex.[1, 2]

Relevant Site Information:

- The health physics offices in this building have been used as counting areas for removable contamination measurements and storage and use of calibration sources. No other regulated radiological materials were managed specifically in this building.

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Building 4044, during its operation. The results of these surveys are summarized in the 4021 site summary.
- Routine daily and monthly radiological surveys are conducted in Building 4044 to verify that it has not become contaminated.[3]

Status:

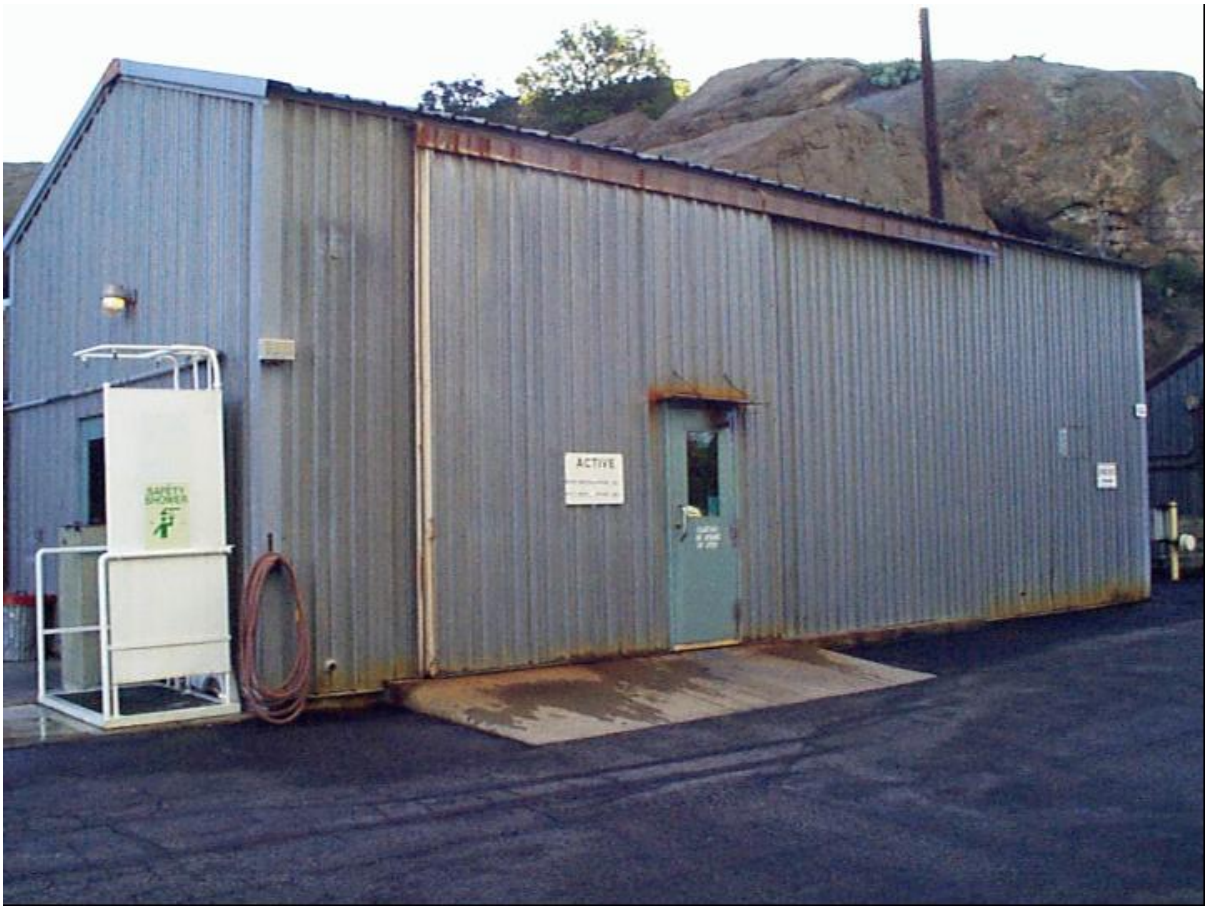
- This facility is active, containing the break room and health physics offices for RMHF.

References:

1- Physical inspection, conducted September 2003.
2- Rockwell International Document, RMDF-AN-0001, "ETEC RMDF Decontamination and Decommissioning (D&D) Project Management Plan," February 10, 1993.

3- Personnel Interview, Phil Rutherford, February 2004.
4- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
5- Historical Site Photographs from Boeing Database.
6- Review of Radiation Safety Records Management System, 2003.

Photograph – Building 4044



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Site Summary – Building 4075

Site Identification:

Building 4075
RMDF Contaminated Equipment Storage Building
RMHF Contaminated Equipment Storage Building

Operational Use/History:

- Constructed in 1971.
- Building 4075 served as a storage area for radioactive waste prior to shipment to disposal sites.[1]
- In approximately 2001, the building ceased to be used as a storage area and has since remained unused.

Site Description:

- Building 4075 is a 2,160-square-foot steel building located on the northwest end of the RMHF complex.[1,2]

Relevant Site Information:

- Radioactive waste was stored in this building. Possible contaminants include: uranium, thorium, plutonium isotopes and mixed fission products.
- The following is an incident which may have involved a release of contamination to the environment:
    - On August 15, 1988, a forklift driver punctured a drum of radioactive sand. The sand spilled out onto the floor of Building 4075; however, surveys indicated that no detectable contamination occurred as a result (A0188).

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Building 4075, during its operation. The results of these surveys are summarized in the 4021 site summary.
- Routine quarterly radiological surveys are conducted to verify that Building 4075 has not become contaminated above the limits established by 10 CFR 835.[3]

Status:

- Building 4075 is inactive.

References:

1- Rockwell International Document, RMDF-AN-0001, "ETEC RMDF Decontamination and Decommissioning (D&D) Project Management Plan," February 10, 1993.
2- Physical inspection, conducted September 2003.
3- Personnel Interview, Phil Rutherford, February 2004.
4- Historical Site Photographs from Boeing Database.
5- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
6- Review of Radiation Safety Records Management System, 2003.

Photograph – Building 4075

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Site Summary – Building 4563

Site Identification:

Site 4563
Building 4633 Storage Yard
Covered Storage Area Neighboring Building 4075

Operational Use/History:

- Constructed in 1958.
- Site 4563 was a paved storage area at RMHF. [1,2]
- The area is still in use as a storage area today, but no longer is designated as Building 4563. Instead, it is referred to as the "covered storage area neighboring Building 4075."

Site Description:

- Site 4563 is the paved area located along the northern border of RMHF, just east of Building 4075.[1,2]

Relevant Site Information:

- Radioactive waste was stored here pending shipment to a disposal facility.[3]
- The most probable contaminants of concern are uranium, plutonium, thorium isotopes and mixed fission products.
- There are no Incident Reports associated with Building 4563.[4]

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Building 4563, during its operation. The results of these surveys are summarized in the 4021 site summary.
- Routine quarterly radiological surveys are conducted in the area to verify that Building 4563 has not become contaminated above the limits established by 10 CFR 835.[5]

Status:

- This area is active as a covered storage area neighboring Building 4075, but it is no longer designated as Building 4563.

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Historical Site Photographs from Boeing Database.

3- Physical inspection, conducted September 2003.
4- Review of Radiation Safety Records Management System, 2003.
5- Personnel Interview, Phil Rutherford, February 2004.

Photograph – Building 4563

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Site Summary – Site 4614

Site Identification:

Site 4614
RMDF Drainage Sump
RMHF Drainage Sump
RMHF Holdup Pond

Operational Use/History:

- Constructed in the middle 1960s.
- Site 4614 served as a holdup pond for surface runoff from the RMDF/RMHF facility.[1]
- Site 4614 is active.

Site Description:

- Site 4614 is a holdup pond located at the base of the drainage channel west of the RMDF complex. The bottom and sides of the pond are lined with asphalt material.[1]

Relevant Site Information:

- Radioactive contamination exists in the pond as a result of known spills that have occurred at the RMDF/RMHF.
- There have been two notable radiological incidents associated with Site 4614:
  - On January 17, 1979, leakage from the flocculation tower associated with Building 4021 contaminated the drainage ditch and the pond itself with less than 0.4 mCi of Sr-90 and Cs-137 (A0077).
  - On January 9, 1980, a water hose broke, causing the Building 4021 tank to overflow, which then drained to the pond. This incident resulted in the released of about 100 gallons of liquid containing 1 $x10^{-2}$ mCi of mixed fission products (A0080).

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Site 4614, during its operation. The results of these surveys are summarized in the 4021 site summary.
- Due to operational history, Site 4614 is likely contaminated.
- Site 4614 is monitored and alarmed by a NaI gamma exposure meter. Any alarms result in immediate sampling of the water. All alarms in the past 14 years have been false alarms caused by power supply and telephone line problems during wet weather. No activity has been detected in the water. Water pumped from this pond into the Santa Susana Field Laboratory (SSFL) water reclamation system is ultimately sampled according to the National Pollutant Discharge Elimination System (NPDES) permit.[2]

- During the dry season when the pond dries up, the sediment is removed from the lined pond and analyzed for contamination prior to being disposed of as radioactive waste. Low levels of Cs-137 are frequently found (e.g. 34 pCi/g in 2003).[4]

Status:

- Site 4614 is active.

References:

1- Rockwell International Document, RMDF-AN-0001, "ETEC RMDF Decontamination and Decommissioning (D&D) Project Management Plan," February 10, 1993.
2- Personnel Interview, Phil Rutherford, February 2004.
3- Historical Site Photographs from Boeing Database.
4- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.

Photograph – Site 4614

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Site Summary – Building 4621

Site Identification:

Building 4621
RMDF Equipment
RMHF Equipment

Operational Use/History:

- Constructed in the middle 1960s.
- Building 4621was used to store contaminated equipment and materials for the RMDF (which later referred to as RMHF).[1]
- Building 4621 is active.

Site Description:

- Building 4621 is a small (approximately 500 square feet) metal structure located along the south border of the RMHF complex.[2]

Relevant Site Information:

- Radioactive material was stored in this facility, primarily in the form of mixed fission products from various site wastes.
- Use Authorization Series 107 authorized the storage of two Krypton-85 Aerosol Neutralizers at this location. One is specified to contain one μCi and the other two μCi. Both are gaseous and sealed in a Thermo-Systems Model 3012 Neutralizer.[3]
- An incident occurred at this facility which may have involved a release to the environment:
    - On September 4, 1975, a 132 mCi Ra-266 source was discovered lying on the ground outside Building 4621. The source was not labeled, nor was in it a shielded container. Following its discovery, the source was properly marked and stored in a secure condition (A0053).

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Building 4621, during its operation. The results of these surveys are summarized in the 4021 site summary.
- Routine radiological surveys are conducted in Building 4621 to verify that the building has not become contaminated above the limits established by 10 CFR 835.[4]

Status:

- This facility is active.

References:

1- Rockwell International Document, RMDF-AN-0001, "ETEC RMDF Decontamination and Decommissioning (D&D) Project Management Plan," February 10, 1993.
2- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
3- Rockwell International, Internal Letter, "Application for Use of Radioactive Materials," Use Authorization Series 107, D. Stelman to R.J. Tuttle, April 15, 1977.
4- Review of Radiation Safety Records Management System, 2003.
5- Historical Site Photographs from Boeing Database.

Photograph – Building 4621

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Site Summary – Building 4622

Site Identification:

Building 4622
RMDF Counting Building

Operational Use/History:

- Constructed prior to 1962.[1]
- Building 4622 was used as a health physics counting area.[2]
- Demolished in approximately 1976.

Site Description:

- Building 4622 was a small (approximately 500 square feet) structure located on the southeast corner of the RMHF complex (near the current location of Building 4658, the RMHF Guard Shack).[2]

Relevant Site Information:

- Health physics samples of waste contained at the RMDF/RMHF facility were counted for radioactivity in this building.
- There are no Incident Reports associated with Building 4622.[3]

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Building 4622, during its operation. The results of these surveys are summarized in the 4021 site summary.
- During its use, routine radiological surveys were conducted in Building 4622 to verify that the building had not become contaminated above the limits established by DOE Order 5480.11.[3]

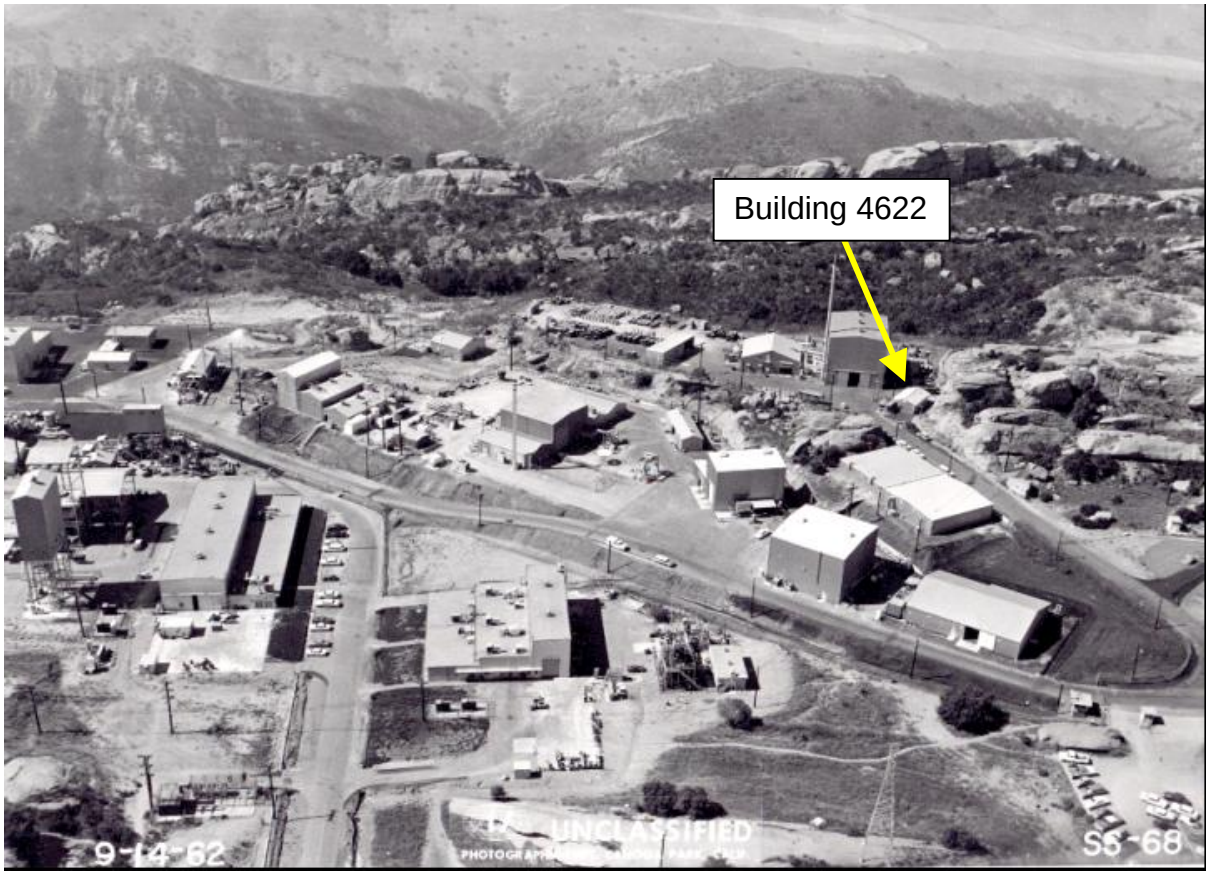
Status:

- Building 4622 was demolished in approximately 1976.

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Physical inspection, conducted September 2003.
3- Review of Radiation Safety Records Management System, 2003.
4- Historical Site Photographs from Boeing Database.

Photograph – Building 4622



Site Summary – Building 4658

Site Identification:

Building 4658
RMDF Guard Shack
RMHF Guard Shack

Operational Use/History:

- Constructed in the early 1980s.
- This building served as a guard shack for the RMDF. The facility's name was later changed to the RMHF.
- Throughout most of the 1980s, this facility was used as the main entrance point into the RMDF/RMHF facility. [1]
- In the late 1980s, security measures no longer required the use of the guard shack as an entrance to the facility. The building still remains as an inactive structure. [1]

Site Description:

- Building 4658 is a small structure (approximately 100 square feet) located at the east end of the RMHF, adjacent to the vehicle entrance gate. During its use as a secure entrance to the facility, it was connected to a mantrap that limited personnel entrance into the facility pending security approval. [2,3]

Relevant Site Information:

- Radioactive materials were not managed specifically in this building, although fuels and wastes were managed at the RMDF/RMHF facility.
- There are no Incident Reports associated with Building 4658.[4]

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Building 4658, during its operation. The results of these surveys are summarized in the 4021 site summary.
- During its use, routine radiological surveys were conducted in Building 4658 to verify that the building had not become contaminated. [2]

Status:

- This facility is currently inactive.

References:

1- Personnel Interview, Paul Waite, August 2003.
2- Rockwell International Document, RMDF-AN-0001, "ETEC RMDF Decontamination and Decommissioning (D&D) Project Management Plan," February 10, 1993.
3- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
4- Review of Radiation Safety Records Management System, 2003.
5- Historical Site Photographs from Boeing Database.

Photograph – Building 4658

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Site Summary – Building 4663

Site Identification:

- Building 4663
- RMDF Storage Area
- RMHF Storage Area

Operational Use/History:

- Constructed in the late 1950s or early 1960s.
- Building 4663 was used for storage of materials.[1,2]
- Demolished in the early 1970s; however, the remaining concrete pad serves as a storage area for non-radioactive material.

Site Description:

- Building 4663 was located on the southern border of RMHF, just east of Building 4621. The remaining concrete pad is approximately 1,300 square feet.[1,2]

Relevant Site Information:

- Radioactive waste may have been stored at this facility. The most probable contaminants of concern are uranium, plutonium, thorium isotopes and mixed fission products.
- There are no Incident Reports associated with Building 4663.[3]

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Building 4663, during its operation. The results of these surveys are summarized in the 4021 site summary.
- During its use, routine radiological surveys were conducted in Building 4663 to verify that the building had not become contaminated above the limits established by DOE Order 5480.11.

Status:

- The building was demolished in the early 1970s. The remaining concrete pad is active as a storage area for non-radioactive material.

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Historical Site Photographs from Boeing Database.
3- Review of Radiation Safety Records Management System, 2003.

Photograph – Building 4663

Site Summary – Building 4664

Site Identification:

Building 4664
RMDF Low Level Waste Processing

Operational Use/History:

- Constructed in the middle 1960s.
- Building 4664 was used as a processing facility for low-level radioactive waste at the RMDF (which was later named RMHF). [1]
- Demolished in the early 1980s.

Site Description:

- Building 4664 was located on the northern border of RMHF, west of Building 4665, and was approximately 1,200 square feet.[1]

Relevant Site Information:

- Radioactive waste and material were most likely stored or handled at this facility. The most probable contaminants of concern are uranium, plutonium, thorium isotopes and mixed fission products.
- The following is an incident which may have involved a release of contamination to the environment:[2]
    - On February 10, 1965, the evaporator system backed up and a flexible hose was blown from its connection, releasing approximately five gallons of radioactive contaminated liquid onto the asphalt. Decontamination of this area was performed immediately (A0362).

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Building 4664, during its operation. The results of these surveys are summarized in the 4021 site summary.
- During its use, routine radiological surveys were conducted in Building 4664 to verify that the building had not become contaminated above the limits established by DOE Order 5480.11.

Status:

- Demolished in the early 1980s.

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Review of Radiation Safety Records Management System, 2003.

Site Summary – Building 4665

Site Identification:

Building 4665
RMDF Oxidation Facility
RMHF Equipment Storage

Operational Use/History:

- Constructed in the middle 1960s.
- Building 4665 was used as an oxidation facility for the RMDF (later renamed the RMHF). [1, 2]
- Building 4665 is still active as a non-radioactive storage area.[1, 2]

Site Description:

- Building 4665 was a small (less than 600 square feet) building located on the northern border of RMHF, north of Building 4022.[1]

Relevant Site Information:

- Radioactive waste and material may have been stored or handled at this facility. The most probable contaminants of concern are uranium, plutonium, thorium isotopes, and mixed fission products.
- There are no Incident Reports associated with Building 4665.[3]

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Building 4665, during its operation. The results of these surveys are summarized in the 4021 site summary.
- Routine quarterly radiological surveys are conducted in Building 4665 to verify that it has not become contaminated.[3]

Status:

- Building 4665 is still standing and is used as a storage area for non-radioactive equipment and materials.

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Historical Site Photographs from Boeing Database.
3- Review of Radiation Safety Records Management System, 2003.

Photograph – Building 4665

Site Summary – Building 4688

Site Identification:

Building 4688
Auxiliary Skid Shack
RMDF Storage
RMHF Storage

Operational Use/History:

- Constructed in approximately 1962.
- Building 4688 was located northeast of the SRE complex.[1]
    - After 1962, Building 4688 no longer appears in this location. In 1967, a structure referred to as Building 4688 appears on an Industrial Planning Map in the RMHF complex. It is unclear whether the original structure was transferred to the second location or a new structure was built.
- Although no documentation exists on the building, its location indicates that it was likely used to support sodium cleaning activities at Building 4723.
- In the middle 1960s, this structure was moved to the RMHF complex and began use as a storage area, possibly for radioactive materials.
- This structure is currently active as a non-radioactive storage area.

Site Description:

- Building 4688 is a small (less than 500 square feet) structure located on the east border of RMHF, just north of Building 4044. It is a shed-type storage structure with no walls, and is used primarily as protection against rain and sun.[2]

Relevant Site Information:

- Radioactive material may have been stored under this structure.
- There are no Use Authorizations and no Incident Reports associated with Building 4688.[3]

Radiological Surveys:

- There have been several surveys of the entire RMHF complex, including Building 4688, during its operation. The results of these surveys are summarized in the 4021 site summary.
- Building 4688 is included in routine quarterly radiological surveys of the RMHF.[3]

Status:

- This facility is currently active as a non-radioactive storage area.

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Physical inspection, conducted September 2003.
3- Review of Radiation Safety Records Management System, 2003.
4- Historical Site Photographs from Boeing Database.

Photograph – Building 4688

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